

ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE OF ALBERTA
FOR THE YEAR
1935

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY



EDMONTON:
Printed by A. Shnitka, King's Printer
1936.

TO HIS HONOUR,

WILLIAM LEGH WALSH,

Lieutenant Governor of the Province of Alberta.

SIR,—

I have the honour to submit herewith the Report of the Department of
Agriculture for the year 1935.

I have the honour to be, Sir,

Your obedient servant,

W. N. CHANT,

Minister of Agriculture.

CONTENTS

	PAGE
Report of the Deputy Minister	7
Report of the Live Stock Commissioner	9
Report of the Superintendent of Fairs	15
Report of the Brand Recorder	16
Report of the Provincial Veterinarian	17
Report of the Dairy Commissioner	23
Report of the Field Crops Commissioner	28
Report of the Poultry Commissioner	36
Report of the Game Commissioner	40
Report of the Provincial Apiarist	45
Report on Boys' and Girls' Live Stock Clubs	47
Report on School Fairs	49
Report on Field Days and Short Courses	51
Report of the Women's Bureau	53
Report of the District Agriculturists:—	
H. W. Scott, Sedgewick	54
G. S. Black, Wetaskiwin	60
F. H. Newcombe, Red Deer	64
W. N. Pidruchney, Willingdon	67
E. G. Wood, Westlock	71
M. L. Freng, Brooks	75
B. J. Whitbread, Claresholm	77
A. A. Campbell, Lethbridge	80
C. O. Asplund, Cardston	86
Report of the Schools of Agriculture:—	
Olds	89
Vermilion	96

DEPARTMENT OF AGRICULTURE

1935

HON. W. N. CHANT, Minister of Agriculture

Heads of Branches

H. A. Craig, Deputy Minister and Superintendent of Schools of Agriculture.

J. F. Andrew, Deputy Minister, Director of Demonstration Farms, and Supervisor of Junior Activities.

P. W. Johnson, Secretary to the Department.

S. G. Carlyle, Live Stock Commissioner, Brand Recorder, and Superintendent of Fairs and Institutes.

P. R. Talbot, V.S., Provincial Veterinarian.

J. R. Sweeney, Dairy Commissioner.

O. S. Longman, Field Crops Commissioner.

G. M. Cormie, Poultry Commissioner.

S. H. Clark, Game and Fire Commissioner.

S. O. Hillerud, Provincial Apiarist.

Miss I. Alexander, Director, Alberta Women's Bureau.

Report of the Deputy Minister

(H. A. CRAIG)

THE HONOURABLE W. N. CHANT,
Minister of Agriculture.

SIR,—

I have the honour to submit herewith the report of the Department of Agriculture for the year 1935.

The crop season of the past year has been an unusual one. Early moisture conditions were favourable throughout the Province. Later in the season, limited precipitation reduced crop yields in the south, whereas in the northern districts excessive and continuous rainfall throughout the spring and summer prevented the seeding of normal grain acreage and delayed maturing of crops. Then followed heavy frosts in August in the central and northern areas, which severely damaged grain crops. Though yields in the south of the Province were fair, and grades high, from the central part north, quality was not good, and in some districts very little grain was threshed. As a result, many farmers and homesteaders have gone into the winter without sufficient feed grain, and in some districts are dependent upon Government relief supplies. This situation will be faced next spring with respect to seed grain, since very little of the grain in the north central part will have sufficient vitality for seed purposes. In conjunction with the Seed Branch of the Federal Government, the Department has made a survey of the seed requirements. The result of this survey indicates that substantial amounts of wheat, oats and barley will have to be shipped into the frozen- and dried-out districts. Accordingly, a Seed Purchasing Policy was adopted and provision has been made for the distribution of this seed during the coming spring.

There has been a general strengthening of the live stock situation throughout the year, probably because of the gradual rise in prices. This is true particularly of sheep and hogs. Though beef cattle prices have not advanced appreciably, the western market was stimulated somewhat by high prices in the United States, which encouraged export trade. Effects of the recent trade agreements with the United States are being carefully observed with the expectation of an increase in export. A decrease in swine marketings was evident for the last three months of the year, being the immediate result of limited supplies of feed grain in the frost areas. This Province again stood second to Ontario in total hog marketings, and again showed a distinct gain in quality of product. Though total of milk production and of dairy products was not so high as in 1934, revenue of the industry was maintained by improved price levels. It is evident from the increase in prizes won by our creameries at the largest exhibitions in Canada this past season, that the quality of Alberta butter has gained a higher standard. In the poultry industry, low prices of the past few years have resulted in depletion of flocks, but interest is now being revived by higher prices and a firmer market.

Conditions in the dry areas were improved somewhat this year. Serious crop failures were restricted to certain limited districts, and the necessity for feed and seed relief in those areas is less acute than a year ago.

Through the spring and summer months, the Department continued to move farmers from the dry areas to more favoured parts of the Province, under the free transportation policy. The grasshopper menace was checked by frequent rains and cold weather in the early summer, which facilitated further control by the poisoned bait method.

Extension work of the Department for the past year was carried on with continued success through the usual channels—district agriculturists, agricultural fairs, school fairs, field days, short courses, Women's Bureau, etc. It is difficult to estimate the benefit of these services to our rural communities, suffice it to say that the demand for them is increasing from year to year.

The Schools of Agriculture at Olds and Vermilion closed a most successful term on March 31st, last, and re-opened again for another school term on October the 22nd. There was some doubt as to attendance prospects for the Vermilion School following this season's frost damage throughout the whole of the north, but I am pleased to report a higher registration at Vermilion this fall than for the previous year. Apparently many of the young men and women of our rural districts are determined to take advantage of the opportunities afforded by the Schools of Agriculture, in spite of financial discouragements on the farm. Fall term registration at Vermilion was 169 and at Olds 206. Total enrolment is 25 in advance of the figures for last year. A notable feature is the growing popularity of the course in Home Economics. The present class of girls at Olds is the largest in the history of the school. Of the total enrolment at the two schools, 242 are boys and 133 girls.

A number of changes in the personnel of the Department staff have occurred during the year. The illness of Mr. J. F. Andrew, Assistant Deputy Minister, since early August, is most regrettable. Mr. Andrew has proved himself an efficient officer and was highly esteemed by all his associates. His duties have been assumed by Mr. S. H. Gandier, formerly of the staff of the Vermilion School of Agriculture. Mr. F. B. Dixon was transferred from the Olds staff to take Mr. Gandier's place at Vermilion as Instructor in Science. Mr. W. C. Cameron, an Inspector under the Dairy Branch, resigned in the spring. This vacancy has not been filled. Several field officers of various branches have been retired through provisions of *The Superannuation Act*. In the interests of Departmental economy, the number of District Agriculturists was reduced to eleven on December 1st, and the Women's Bureau was suspended for similar reasons on December the 15th.

The reports of the various Branches give complete detail of the activities of the Department and are attached herewith.

REPORT OF THE LIVE STOCK COMMISSIONER

(S. G. CARLYLE)

The prices of live stock have considerably improved over a year ago—this pertains particularly to cattle and sheep—with the result that a much better feeling exists among the producers, and especially the ranchers in the southern part of the Province. While beef cattle and dairy products may still be low in price, the prices for horses, sheep and pigs are fairly satisfactory, and I believe are on a paying basis to the producer.

The quality of our live stock generally is improving, but we have still large numbers of low grade stock coming to the market. This poor quality stock not only brings a low price, but it also affects the price of the better grades. However, taken on the whole, the general live stock situation has improved, prospects are much better, and the producers much more optimistic than a year ago.

Some sixty live stock meetings and field days were held during the year. The greater number of these were well attended, and a keen interest was shown by those present.

Horses.—There was a good demand for horses, and prices were satisfactory. Prices, however, would have been better if the farmers had more purchasing power. The dealers complain at present that good, well-broken horses are scarce and hard to buy. While there has been a good local demand in some parts of the Province, there has been an exceptionally strong demand from the east, and we have exported out of the Province approximately 20,003 head. For the past ten years, 1926 to 1935, inclusive, the average number of horses shipped out of the Province has been 20,194 head. We are still the great exporting Province of the Dominion, and if better horses were raised, so that higher prices could be realized, the value to the industry, as a whole, would be greatly increased. We believe that with the cheap grazing lands over large areas of Alberta, if good type blocky horses from 1,300 lbs. up were raised, there would be a profitable market in the east for many years to come.

The demand for breeding stallions has been very keen, and some good horses have been brought into the Province, but we still need a larger number of good sires.

Some good sales of pure-breds were made during the year, one Percheron filly being sold to the Ontario Government, and one two-year-old Percheron stallion was bought by a Scottish breeder at a good price, and imported to Scotland. This colt was bought at the Royal Show, where he won second prize. It is quite a distinction to have this colt selected from Alberta, when France, the home of the Percheron, is in such close proximity to Scotland. It demonstrates that we can raise horses of the highest quality in this Province.

Cattle.—With better prices over a year ago, farmers and ranchers are feeling much more optimistic, but a further increase is necessary before profits are realized by the producers. Owing to the dry weather in central Alberta in 1934, fewer cattle were fed in that district last winter, but taking the Province as a whole, there was little if any decrease in cattle feeding compared with former years. With the low price for

feeder cattle in the fall, a big profit was not expected, but in the month of February, like "a bolt from the blue", prices for finished beef cattle in the United States swept suddenly upward and reached such a high point that it enabled the Alberta feeder to pay the duty and ship to the American market—something he has not been able to do since the Hawley-Smoot tariff came into effect in 1930. Prices continued high during the spring and summer months, and anyone who fed cattle made a handsome profit.

The United States buyers were again active in the fall and bought large numbers of Alberta feeders to finish in the corn belt. The price for good feeder cattle was from 1 cent to 1 cent and a half higher than the previous year, but this higher price did not deter farmers from putting them into the feed lots, and with the reduction of 1 cent a pound in the tariff from the United States, which came into effect on the 1st of January, 1936, their judgment in feeding cattle again this year, I think will be amply justified.

The result of the high price in the United States transferred the shipment of cattle from Great Britain to the American market. During the years 1932, 1933, 1934 and 1935, the following cattle were exported to the United States and to Great Britain:—

	United States	Great Britain
1932.....	..	1,244
1933.....	2	2,982
1934.....	124	1,199
1935.....	39 528	..

During the years of low prices, cattle accumulated on the ranches especially. Prices were so low that the rancher kept his cows rather than sacrifice them, and the result was that there was a large increase in the number of cattle in Alberta.

During the five-year period prior to 1930, the average shipment of cattle out of Alberta was 192,450 head; during the years 1931, 1932, 1933 and 1934, the average shipment out of the Province was 121,708, and in 1935 the shipments have again jumped to 214,821. The total Canadian exports of cattle for the five years previous to the raising of the tariff was 928,838, and the total since the raising of the tariff 219,066.

Like other classes of live stock, Alberta has a larger surplus than any of the other Provinces. Alberta's marketings of cattle for the year 1935 amount to twenty per cent. of the total for the Dominion.

While Alberta has a large percentage of better type beef cattle, still the greater percentage of our cattle are of an inferior type, and a greater improvement should be made.

Quite a large percentage of the cattle coming to the market are of mixed breeding, and while dairying holds a large place in Alberta, and rightly so, still if more attention was paid to keeping the dairy and beef breeds separate, and have the dairy steers marketed in the form of veal calves, it would perhaps help more than anything else to improve the quality of our market cattle and bring more remunerative prices.

There is a tendency for more farmers to go into pure-bred cattle raising, believing it to be more remunerative than the raising of grade or commercial cattle. While pure-bred breeders are needed to raise sires for ranchers and smaller stockmen, there is a danger at the present time for men to go into this business who have not the qualifications or financial backing to make a success of it, with the result that a large number of inferior or mediocre bulls are offered for sale. This is well demonstrated

at our Bull Sales held at Calgary and Edmonton, where large numbers of common type animals are offered and bring exceedingly low prices. These bulls are not doing very much good to the man who raises them, and perhaps still less good to the man who purchases them. If we are to improve our commercial cattle, more attention must be paid to the quality of bulls used by our producers of grade stock.

The pure-bred breeder who has high quality animals kept in good condition should be able to get a price sufficient to keep him in the business. The quality of our commercial cattle which go to market depends largely on the type of sire used, and too much attention cannot be paid in the selection of this sire. During hard times there is a tendency to buy the poor quality inferior bull, just to get by, and it is usually a costly experience, as the result of a mistake of this kind can often be traced in the herd for years.

Twenty-nine bulls were purchased under the Government Bull Purchase Policy during the year—12 Shorthorns, 8 Herefords, 6 Angus, 2 Holsteins, and 1 Ayrshire. This makes a total of 230 since the policy started.

Below is a summary of the 1934 bull sales:—

EDMONTON BULL SALE		
Breed	No. Sold	Average Price
Hereford	14	\$131.07
Shorthorn	66	103.40
Aberdeen Angus	11	95.00
Holstein-Friesian	..	..
	91	\$106.65

CALGARY BULL SALE		
Shorthorn	197	\$107.34
Aberdeen Angus	86	99.19
Red Polled	1	50.00
Herefords	390	145.71
	674	\$128.41

LACOMBE BULL SALE		
Hereford	12	\$106.65
Shorthorn	48	101.75
Angus	7	89.30
	67	\$ 93.29

Sheep.—Some heavy losses were experienced among the sheep raisers in the year 1935. Due to the cold, late spring, lamb losses were quite heavy, and on the range the losses reached as high as forty per cent. Farm flocks did not suffer so much, though the loss was considerable. The increased price of wool and lambs, however, partially made up for the death losses, so that on the whole the sheep men had a fairly satisfactory year.

There was a good demand for feeder lambs in the fall of the year, and the price from four to four and one-half cents a pound was a considerable advance over a year ago.

Quite a large number were fed in the Lethbridge, Brooks and Lacombe districts again, and with the price for fat lambs on the market, a good margin of profit should be made.

With the increase in the price of wool and in the price of lambs, the commercial sheep business looks brighter than for some years.

In the pure-bred business, prospects are not so bright. At the large sales held at Calgary, Edmonton and Lacombe, prices were lower than

ever before. In fact, a great many rams were not sold at all. The pure-bred sheep business is different from the pure-bred cattle business in that the ranchers buy a large number of pure-bred bulls, but they do not patronize the ram sales, and in fact do not buy the breeds offered at the sales.

Practically all the breeders in the Province are breeding some of the Down breeds, and the rancher does not think these breeds are suitable to his conditions. Range sheep are practically all Rambouillet bred, and there are very few Rambouillet breeders in the Province, with the result that a considerable number of these rams are brought from across the line every year. This leaves the pure-bred sheep business confined to the farmers of the Province, and at the present time there are more pure-bred rams offered for sale than the market can absorb.

For the past few years hogs have been bringing such a high price in comparison with sheep that farmers on half-section farms or less have turned their attention to hogs, and to some extent dairy cattle.

On the range and on rough land there is a place for commercial sheep, but just what expansion there will be on the farms of the Province, where expensive fencing must be used, and where they are really in competition with pigs and cattle, is perhaps a debatable question.

It is no doubt a fact that sheep can make out on poor and rough lands better than any other class of stock, and, perhaps in the immediate future, the expansion will be on these lands rather than on the higher priced cultivated farms of the Province.

The Suffolk Society of England shipped ten yearling Suffolk rams to be sold at the Calgary sale, and if it was profitable, future shipments might have followed, but owing to the large number of rams offered, prices were not as high as expected, and it is doubtful if they will find it profitable enough to make any future shipments.

Below is a summary of the 1935 Sheep Sales held in the Province:—

EDMONTON SHEEP SALE		
Breed	No. Sold	Average Price
Shropshire ewes	2	\$ 6.00
Suffolk ewes	10	5.95
Oxford ewes	3	4.92
	15	\$ 5.62
Shropshire rams	7	\$13.71
Southdown rams	1	35.00
Suffolk rams	38	14.34
Hampshire rams	9	14.55
Oxford rams	25	11.36
	80	\$17.78

CALGARY SHEEP SALE		
Hampshire ewes	89	\$ 6.72
Oxford ewes	7	4.71
Shropshire ewes	27	5.19
Cheviot ewes	5	5.40
Suffolk ewes	94	6.74
	222	\$ 5.93
Grade ewes	617	\$ 2.28
Hampshire rams	114	\$ 16.27
Oxford rams	12	10.50
Shropshire rams	38	15.49
Suffolk rams	124	16.23
	288	\$15.91

Hogs.—Hogs continue to be the most profitable class of live stock on the farm. With the low prices of coarse grains and the prices received for hogs, farmers are finding it more profitable each year to feed their grains rather than deliver them to the elevator.

Prices of hogs have averaged higher than in the preceding year. There have been less fluctuations and a more uniform price level seems to have been established. While complete figures are not available, it would appear that the number marketed in 1935 would be equal to the marketings of 1934.

In looking back over the hog marketings since 1920, we find there has been a steady increase in production except for the past two years.

In 1920, 74,237 hogs were marketed in Alberta, and in 1933 over a million hogs were marketed, and this number has kept up during the past two years.

There has not only been a heavy increase in production, but there has been a great improvement in quality also. The grading of hogs was started in 1922, and in 1923 the first grading returns were available. The percentage of the selects in that year was 2.42% of the hogs marketed, and in 1935 it reached as high as 18%. The percentage of bacons in 1923 was 13.33%, or a total of the two highest grades, which is suitable for export, of 15.75%. In 1935 the total percentage on the first two grades reached 56%.

It is estimated that the value of the hogs marketed the past three years reached the enormous sum of about fifteen million dollars a year. Alberta pig producers have reason to be proud of this splendid record.

It is generally conceded by the packers that in a short time Alberta will take the lead over the other Provinces in swine production. Our marketings have been on a par with Ontario the last two years, and as this Province has a much larger surplus of coarse grains available, advantage will be taken of this feed by the farmers to market the grain by feeding to hogs, rather than by sending it to the elevator. We are still considered behind Ontario in the quality of our hogs, but at the present rate of improvement, we will soon have a satisfactory percentage of the high grades.

There will no doubt be a slight reduction in the number of hogs marketed in 1936, due to the heavy frost which affected the grain crop of practically the whole of central and northern Alberta, making useless for feed several thousands of acres of crop.

In the spring of 1935, there was a heavy mortality of young pigs. Some loss may be accounted for by the season, which was cold and late, but as swine production increases, farmers will be faced with the problem of dealing with more swine diseases, and it is a general opinion that most of the losses which occurred last spring were due to some infectious disease.

Research work should be carried out both by the Provincial and Dominion Governments and investigations made, so that we can become familiar with the diseases which cause so many losses, especially among the young pigs in the spring of the year.

The Dominion Government decided late in 1935 to build a hog house adjacent to the Edmonton Stock Yards for advanced swine registry work. It is hoped that this building will be completed early enough in the season to allow the spring litters to enter.

The Swine Sales held at Edmonton and Calgary were quite successful this year, and the prices were considerably higher than a year ago.

Below is a summary of the 1935 Calgary and Edmonton Swine Sales:—

CALGARY SWINE SALE		
Breed	No. Sold	Average Price
Tamworth females	4	\$23.50
Yorkshire females	29	28.59
Yorkshire boars	53	38.43
Tamworth boars	3	39.66
EDMONTON SWINE SALE		
Tamworth sows	5	\$22.00
Yorkshire sows	14	31.46
Yorkshire boars	21	28.98

REPORT OF THE SUPERINTENDENT OF FAIRS
(S. G. CARLYLE)

A small grant was given to the fairs in 1935, and eighteen fairs were held—two Class “A” fairs, Calgary and Edmonton; six Class “B” fairs; and ten Class “C” fairs.

Most of these fairs had splendid exhibits of live stock, and farmers of the district took a keen interest, the majority of them expressing their opinion of the value of the fairs, and hoping the Government could see its way clear to give a little higher grant, which would enable them to carry on.

The Agricultural Fair has a place in the Province. It encourages the breeding of better classes of stock. Animals are brought together in competition, and the people can see by the placing of the awards, the type that is required to bring the highest price on the market. Marketing of farm produce is quite essential, but the production of high quality goods is also essential, because it is much easier to market good quality products than poor ones, and they always bring a higher price.

The annual Fairs Convention was held in the City of Edmonton on December 28th, 1935. This meeting was well attended, and a strong desire was expressed that a grant sufficient to enable the fair to carry on be given by the Government. A resolution was also passed that the number of fairs be cut down to not more than thirty for the coming year.

As usual, an exhibit was made to the Royal Show at Toronto of some thirteen carloads of stock from this Province, and six animals were also taken over to Chicago and exhibited there. Alberta live stock breeders won the following prizes at the Royal Show:—

13 Championships,
10 Reserve Championships,
4 Specials,
40 Firsts,
28 Seconds,
21 Thirds,
57 Others.

When it is considered that the best stock from the whole of Canada and from some of the States in the Union, were in competition, Alberta seems to be able to hold her own, and in a great many classes to excel the other provinces. This is especially true in the beef cattle breeding classes and in market classes.

REPORT OF THE BRAND RECORDER

(S. G. CARLYLE)

During the year 1935, 350 new horse brands, 693 new cattle brands, 1 sheep brand and 15 fox brands were recorded to their respective owners, while 82 transfers were registered. Changes of brands, searches, and strays numbered 2,199, and renewals 2,958 (cattle 1,802 and horses 1,156), making a total of 6,298 transactions.

Compared with 1934, these figures show a decrease of 27 horse brands and 69 cattle brands, and an increase of 7 transfers, 134 strays, 385 renewals, and 15 fox brands.

The approximate number of brands now in good standing in our registers are as follows: horse brands, 7,019; cattle brands, 12,570; poultry, 9. sheep, 6, and fox, 15, making a total of 19,619.

REPORT OF THE PROVINCIAL VETERINARIAN

(DR. P. R. TALBOT)

As in former years, the duties of the Provincial Veterinarian are varied, and can be summarized as follows:—

The supervision of the health of the live stock at all the Provincial Government Institutions of Alberta.

The conducting of meetings in relation to diseases of live stock in various parts of the Province.

The prevention and control of diseases of animals that do not come under *The Animal Contagious Diseases Act* of the Dominion Government.

Giving lectures at the University of Alberta on Veterinary Science, as well as at the various short courses held during the year.

Supervision and conducting of experimental work, in relation to diseases found peculiar to animals in this Province.

Giving assistance to those living in outlying districts, where the services of veterinary surgeons are not available.

EQUINE ANEMIA.

In previous reports attention has been called to the prevalence of this disease in the northern sections of the Province. The disease is known by a variety of names; such as, typhoid influenza, equine malaria, river bottom disease, mountain fever, and erroneously, swamp fever. Our experiments have continued throughout the year, and with the help of the Provincial Laboratory, bacteriological examinations have been made of blood samples, but little progress has been made in finding the causative agent.

For some time we have been impressed with the fact that many of the horses in northern Alberta were infested with certain parasites, and there might be a relationship between parasiticism and equine anemia; for that reason some time has been devoted to this angle of the problem. We have found that a certain parasite was constantly found in horses affected with this trouble. We were unable to identify them, and specimens were forwarded to Dr. T. W. M. Cameron, Research Professor of Parasitology, McGill University, Montreal, P.Q., for identification. We are now endeavouring to combat the disease by elimination of the parasites from the digestive tract of horses showing symptoms of this trouble, and when followed by medicinal remedies, it would appear as if we were meeting with some success.

Owing to the extremely wet weather, especially north of Edmonton during the past summer, conditions were favourable for the development of many diseases of the horse, and should swampy ground favour the development of the parasites thought to be the possible agent in the condition referred to, one can well understand the prevalence of the disease during the past year. We are receiving numerous requests as to our recommendations for combatting this trouble, and we are making every effort to prevent as little loss as possible.

According to reports received during this year, we had more losses in our live stock from poisonous plants than in any previous year. This may

be accounted for by the fact that farms are becoming more closely pastured, and in addition, the past spring was an unusually late one, and as poisonous weeds begin to grow early in the spring, it offers green succulent forage before the native grasses make their appearance; hence, stock may be tempted to eat poisonous plants before good forage becomes plentiful. In addition to this, early rain-storms and late snow-storms caused stock to seek shelter in coulees and small patches of timber; and as certain poisonous weeds, especially larkspurs, grow in these locations, stock are thus exposed to these plants when they are very poisonous.

The bulletin, "Weeds Poisonous to Live Stock", prepared by this Branch, has been distributed widely throughout western Canada. Methods suggested in this bulletin to prevent stock from eating poisonous plants, have been rapidly adopted, and frequently and favourably commented upon.

The value of salt is an important factor in the prevention of plant poisoning, and should the animal not get its required amount of this mineral, it may develop a perverted or depraved appetite, and will then eat poisonous plants that they possibly would not touch if this appetite were normal. This also is emphasized in connection with the water supply; when stock cannot get plenty of good water they sometimes develop depraved appetites. Alkaline water especially should be avoided, as there are reasons to believe that it develops an abnormal appetite in stock. We would also suggest that, especially in the spring, every precaution should be taken to see that the stock which are turned out on the ranges or pastures do not become too hungry at any time, for hungry animals exercise little discrimination in their choice of forage. Care should be taken when stock are being moved; after unloading from a train they should be allowed to fill up on good hay before they begin to move. They will then be less liable to snatch at plants that may be poisonous, as they are being transferred from one point to another.

HEMORRHAGIC SEPTICEMIA.

Hemorrhagic septicemia is quite widespread throughout Alberta. It is prevalent among cattle and swine, and occasionally outbreaks of the disease in sheep are noted. Animals which are in poor condition, being of lowered vitality, are the most susceptible. There are several predisposing causes, such as exhaustion from long journey by rail or truck, especially in cold or rainy weather; lack of proper feed, water and exercise, and also improper ventilation may be a factor. This disease occurs in different forms, but the types most prevalent in Alberta are those affecting the respiratory organs and digestive tract.

The use of bacterines or aggrassin are giving excellent satisfaction in the way of immunization, especially with cattle, and it is being used widely throughout the Province. It has not proved so satisfactory in swine, however, and for some time past we have been using preparations made by different biological houses, in order to see if we could find one that would produce a more satisfactory immunity if it were possible to do so. It is our opinion that considerable work will have to be done along this line if we are going to develop a satisfactory system of vaccination against this disease in swine.

The bulletin entitled, "Swine Production in Alberta", published by the University of Alberta, the last pages of which were prepared by this Branch, contain useful information regarding this disease, and also diseases in swine that are found to be most prevalent in this Province.

PARASITES.

In Alberta we are fortunate in having only a few varieties of internal parasites affecting sheep and swine. In the former animal they are confined largely to the stomach worm and the tape worm. Until recently the former were confined almost entirely to southern Alberta, but now we find them quite widely distributed. Tape worms in lambs is one of the serious problems confronting us, and we are finding them in flocks in widely scattered sections of Alberta.

Unfortunately, parasitic diseases are unlike diseases caused by bacteria, and the symptoms sometimes extend over a considerable time without attracting the attention of the owner of the animal, or possibly he may be confused with the symptoms of some other condition. It, therefore, frequently happens that a large number of sheep may be parasitized before the trouble is recognized. For this reason we have advised all sheep men to watch for the symptoms produced by parasites, and treat their sheep by the different preparations recommended by this Branch.

Parasites in swine are almost entirely comprised of the round worm. This is widely distributed, but certain farms and certain sections seem to be more badly infested than others. The owners of swine, whose premises are badly infested with the eggs of this parasite, must be prepared to take drastic steps in the way of cleaning up his hog lots and houses.

On account of the various ways in which this parasite may damage the host, it is often difficult to diagnose parasiticism in swine, and often the owner is not aware that his swine are affected until a post mortem examination is made.

There are two excellent bulletins, "Sheep Production in Alberta", and "Swine Production in Alberta", the last pages of which were prepared by this Branch, and contain a description of the symptoms and control of parasites in these two classes of animals. These bulletins are proving of great assistance to the breeders of these classes of live stock.

BOVINE COCCIDIOSIS.

For some time past, evidence has gradually accumulated which shows that this disease is present to a certain extent in Alberta. We have had several losses attributed to its cause, which upon examination show all the characteristic symptoms of this trouble. On account of the similarity of the symptoms of coccidiosis to hemorrhagic septicemia, there is a great possibility of many of these cases being mistaken for the latter trouble. For that reason we have endeavored to check up on all those cases that do not respond to the treatment for hemorrhagic septicemia, with the thought in mind that they might be coccidiosis. It is our intention to gather all possible information on this subject, for it has caused considerable losses in some parts of Canada and the United States. As you are aware, weather conditions have been favourable for parasitic diseases for the past two years, and this may be a factor in causing this particular one to make its appearance.

In addition, the practice of purchasing feeder cattle from different sections of the Province and placing them in feed lots where the animals are rather closely confined over a period of several months, may also be an attributing factor in causing the trouble to develop.

ARTIFICIAL INSEMINATION.

During the past two years our attention has been drawn, through articles in veterinary journals, to artificial insemination in animals as practiced in Russia. In addition, reports have been published in connection with this work by the University of Cambridge, England. With the co-operation of Dean A. C. Rankin, University of Alberta, experiments were undertaken last spring at the Provincial Laboratory along similar lines as those carried out by Cambridge and Russia.

Spermatozoa were collected and kept at certain temperatures according to the information we have received from Cambridge; although the directions were followed explicitly, we were unable to obtain the same results as published in the reports that were received from the above centres. There may be various reasons for this that will develop later, but our investigations were confined entirely to horses, and from some information recently obtained from investigators in the United States, the material from this class of animal is more difficult to handle than that from other classes of live stock. We were able to carry the material considerable distances, and kept it alive for a definite period, but much time was spent in finding out the proper temperatures at which it could best be maintained. It is our intention to extend this work in the coming year, as there are great possibilities in it becoming a valuable asset in the improvement of our live stock, especially when there is such a scarcity of good sires, and with no apparent likelihood of there being new importations of high-class sires by our local breeders for some time to come.

EQUINE ENCEPHALOMYELITIS.

This disease has caused considerable loss in horses in Manitoba and Saskatchewan during the past summer, and owing to the publicity given it in the press, we received numerous reports regarding suspected cases throughout this Province. On account of the seriousness of this disease, and its close proximity to Alberta, we notified all our local Veterinarians giving them a complete description of the symptoms, and asking them to notify this Branch immediately should they come across any suspected cases. We also made arrangements for the securing of vaccine as a treatment and preventive against this disease, should it arise. The Veterinary Surgeons gave their fullest co-operation, and reported many suspected cases, which upon the symptoms being examined, although closely resembling equine encephalomyelitis, were found to be due to some other origin.

On account of so many districts being without the services of Veterinary Surgeons, and where the farmers in outlying districts reading the press articles, became alarmed when their horses showed symptoms unfamiliar to them, suspected cases were reported to this Branch and were personally investigated, with the result that the work was increased enormously for several months.

As mosquitoes and biting flies have been suspected as being the cause of the transmission of this disease, and as it is apparently extending westward, there is a possibility that the coming year may see some outbreak in parts of this Province. We are, however, better organized to handle the situation should it arise, than we were last year. As far as we know, there has not been one case of this disease, up to the present time.

TUBERCULOSIS.

Experimental work in connection with bovine tuberculosis is being carried on at some of the farms in connection with the Provincial Government Institutions. It is confined to vaccination of calves with B.C.G. vaccine as a preventive against this disease. The herds in which this vaccination is being used were composed at one time of animals, the majority of which had reacted previously to the tuberculin test, and by vaccinating the calves from these cows immediately at birth, we hope to be able to have within a period of a few years, a herd completely immune from the disease. At various times we have had to slaughter a considerable number of animals from these herds on account of age, sterility, undesirable conformation, and many other reasons. Post-mortem examinations are made of all animals slaughtered, as well as the examination of the glands at the Provincial Laboratory for lesions of tuberculosis, and it is the opinion of the Tuberculosis Committee that the work along this line is progressing satisfactorily.

Dr. A. C. Rankin, Dean of the Medical College, University of Alberta, and the Provincial Veterinarian have also the supervision of a large tuberculosis experiment which is financed by the National Research Council of Canada. This work has been under way for several years on a farm in the vicinity of Edmonton, and the results obtained through these experiments have been a valuable contribution to tuberculosis investigations, not only in Canada but in other countries as well.

STALLION ENROLMENT.

The past year showed a great increase in the interest regarding horse breeding in this Province; not only were the number of enrolments increased, but inquiries for stallions were much greater than for some years past. There is no doubt but there is going to be a scarcity of good stallions for the coming year. If these animals could be properly distributed it would help considerably in improving our horses. Unfortunately, certain localities have difficulty in securing a good stallion, while in others there are more than are absolutely necessary.

The outlying districts are the most affected, having new settlers continually opening new districts, making the situation more difficult to secure good stallions.

In well established districts the Dominion Government Clubbing Policy is particularly popular, but, unfortunately, in the districts that have not been long established, and are sparsely settled, this policy does not suit their requirements.

Last spring a scheme was developed whereby groups of farmers could join together in purchasing a stallion for their district. The amount of money collected was on the ratio of so much per mare, and the stallion was placed in the hands of one individual who took charge of him for three years, and at the end of that period of time he was given ownership. This Branch assisted in organizing these groups, locating the horses, transporting the intending purchaser to make his selection, and paying the freight from the nearest railway point to where the stallion was to be located. In all, some fifteen animals were placed with these groups, and it is gratifying to report that in all instances, entire satisfaction has been expressed. This scheme may be the solution for placing stallions in outlying districts, where the services of good pure-bred animals are not

obtainable in any other way. Judging from requests coming to this office during the past month, it seems very probable that the number of animals purchased under this scheme will be greatly increased this coming year. It has been expressed by horsemen in several provinces, that this is the best policy that has ever been established in the way of stallion promotion in any of the provinces of the Dominion, in that it assists the individual farmer who is not in a position to secure the services of a high class stallion.

This Branch is pleased to report that there is increased interest in thoroughbred stallions, and also in the breeding of horses for saddle purposes. The efforts of the Thoroughbred Horse Breeders Association at Calgary and Edmonton are doing much to promote this class of horse, and the Riding Schools and Academies in the large centres have assisted largely in making it possible for those breeding this class of animal to dispose of them through this channel.

The total number of stallions according to breed, enrolled during the year 1935, is as follows; Percheron, 329; Clydesdale, 203; Belgian, 110; Thoroughbred, 20; Shire, 15; Suffolk, 8; Standard, 8; American Saddle, 4; and Jack, 1; making a total of 698.

REPORT OF THE DAIRY COMMISSIONER

(J. R. SWEENEY)

The year 1935 was not a favourable one for dairying; a severe winter, accompanied by a shortage of feed, was followed by a late, backward spring. The cows came through much below normal in condition, and as a consequence, milk production was lower for the first six months of the year. During the last six months, however, pastures were good, fodder was plentiful and an increase in production was recorded, though not sufficient to overcome the declines of the winter and spring months.

While it is necessary to report a slight decrease in total milk production, there is a compensating factor in the improved price levels which brought the total value for the year's output of dairy products almost equal to that reported for a much larger production in 1934. It is, therefore, encouraging to note that for three successive years price levels of dairy products have risen and market values are gradually returning to normal.

The output of creamery butter amounted to 23,095,000 pounds, compared with the peak production of 25,601,000 pounds in 1934—a decrease of 9.8%. The total value of all dairy production was \$14,252,500.00.

A summary of the production and value is presented in the following statement:—

QUANTITIES AND VALUES OF DAIRY PRODUCTS—1935 (FINAL)

	Pounds	Price	Total Value
Creamery butter	23,094,707	\$.19.9	\$ 4,588,917
Home dairy butter.....	13,000,000	.15	1,950,000
Factory cheese	1,364,526	.12.3	168,280
Home dairy cheese.....	225,000	.10	22,500
Ice cream (gallons).....	375,299	\$1.20	452,459
Milk and cream consumed or otherwise utilized, fed to animals, etc.	..	..	7,070,344
Total.....			<u>\$14,252,500</u>

1934 (FINAL)

	Pounds	Price	Total Value
Creamery butter	25,601,477	\$.18.8	\$ 4,830,793
Home dairy butter.....	13,400,000	.14.0	1,876,000
Factory cheese	1,370,425	.11.2	154,138
Home dairy cheese.....	250,000	.09.0	22,500
Ice cream (gallons).....	377,262	1.12	424,076
Milk and cream consumed or otherwise utilized, fed to animals, etc.	..	..	7,083,697
Total.....			<u>\$14,391,204</u>

MARKETS.

As in former years, the surplus production was manufactured into creamery butter, and approximately half of the output was sold in the British Columbia market. A small quantity was sold in eastern Canada, and somewhat less than one million pounds were exported to the United Kingdom markets.

The exports were handled under the direction of the "Federal Butter Stabilization Export Board", a body set up by Federal authority under the Dominion Marketing Board to assist in removing the Canadian butter surplus. Export agencies were designated by the Board to handle the

export movement and were guaranteed against loss to an amount not exceeding one and one-half cents per pound. The Board promoted the export of approximately seven million pounds of butter, and since the United Kingdom market reached the high point of the year during the period of the Canadian exports—early in October—the deal was a very satisfactory one. Canadian stocks were reduced to a point where domestic prices firmed, and producers benefited by a higher fall and winter price than might otherwise have been possible.

Alberta producers benefit by the position which Alberta creamery butter occupies in the Vancouver market. Every effort is being made to study the changing public tastes in that market, and continued vigilance is needed to improve the quality of our cream and butter, in order that our natural outlet may be preserved and extended.

CREAM GRADING.

The quality of cream delivered to Alberta creameries very largely determines the flavor of Alberta creamery butter. Having regard for this fact, and realizing that the producers hold the key to improvement in quality, a circular on the production of "Special" grade cream was prepared and distributed through the creameries to 40,000 cream producers. Creamery operators and licensed cream graders co-operated in the campaign for better cream, and improvement was noticeable during the latter part of the season. The grading standards were rigidly observed, and the Inspectors of this Branch made 1,694 inspection visits, checking 23,118 butterfat tests, and grading 60,585 cans of cream. In addition to checking of grades and tests, the Inspectors give general instruction and assistance in the grading of cream and in improved methods of manufacturing creamery butter.

BUTTER GRADING.

Alberta creamery butter is graded by Dairy Produce Graders, employed by the Federal Dairy and Cold Storage Branch, Ottawa. The following statement shows the grading report for 1935, and a comparison with previous years:—

STATEMENT OF CREAMERY BUTTER GRADED (PASTEURIZED)
FEDERAL REPORT, GRADED IN 56-POUND BOXES

Year	Total Pounds Graded	First Grade %	Second Grade %	Off Grade %	No Grade %
1927.....	3,278,327	68.82	23.94	7.24	..
1928.....	3,313,072	70.4	22.9	6.7	..
1929.....	4,511,864	70.55	20.31	9.14	..
1930.....	5,679,520	68.71	20.03	11.26	..
1931.....	10,882,928	73.22	15.36	10.09	1.33
1932.....	9,656,192	79.38	14.14	5.79	.69
1933.....	14,592,872	79.70	13.96	5.88	.46
1934.....	14,893,760	78.01	15.04	6.23	.72
1935.....	12,909,848	82.19	10.78	6.28	.75

An outstanding feature of the Federal butter grading report is the relative proportions of high scoring butter in First Grade. In 1933 the First Grade showed 41.7%, scoring 93 or higher; in 1934 the 93 score butter reached 48.6%; and in 1935, 59.0% of the First Grade butter scored 93 or higher.

PRIZES WON.

Another indication of the improvement in the quality of Alberta butter is shown in the prizes won by Alberta butter-makers at the ten

largest exhibitions in Canada. Alberta butter was awarded 570 prizes at Brandon, Regina, Saskatoon, Edmonton, Calgary, Vancouver, Canadian National (Toronto), London, Ottawa, and the Royal Winter Fair, Toronto. This number represents 35.5% of all prizes awarded at these fairs, and numerous buyers of butter have been attracted by the advertising which these awards have brought to Alberta creamery butter.

CREAMERIES.

There were 97 creameries operating during the year. The Bentley Creamery was re-opened; the creamery built near Beaver Crossing, in the Cold Lake area, commenced operations; and a new creamery was built at Bluffton by Montalbetti Brothers. A new creamery was built at Bowden, replacing the one destroyed by fire; this plant is being operated by the Bowden Co-operative Creamery, Limited.

CHEESE FACTORIES.

There were 11 cheese factories in operation during the year. The new factory built by the Killam District Co-operative Association, Limited, commenced operations in February, and the Markerville Creamery was licensed to manufacture cheese, June 1st.

In order to improve the quality of Alberta cheese, it was decided to assign Mr. G. W. Scott to instruct the cheese-makers and pay frequent visits to factories turning out defective cheese. On August 1st, the Federal Dairy Produce Graders commenced grading Alberta cheese, and it is encouraging to report that 67% of the cheese offered for grading was placed in First Grade.

At the Vancouver Exhibition, Alberta cheese carried off all First prizes in the three sections of Canadian Cheddar cheese. There is a growing demand in the retail trade for properly matured cheese, and more attention is being given to storage facilities for ripening Alberta cheese. It has, therefore, been established that a good quality of Cheddar cheese can be made in Alberta. It is desirable that at least enough cheese should be made in Alberta factories to supply consumptive demands within the Province.

COW TESTING.

The cow testing service outlined in last year's report was continued. There were 50 herds, comprising 655 cows, under test, and the results were quite satisfactory to the herd owners. In addition to the "Mailing System", an extension of the cow testing work was undertaken during the year.

A start has been made in organizing cow testing centres at creamery points. There are 73 herds signed at six creamery centres, and 754 cows are being tested under the enlarged cow testing service. It is hoped that this very important work of herd improvement will be extended in sections where grade cows of dairy breeding are being kept.

LABORATORY.

The bacteriological work was continued in the laboratory at the University. Dr. Linneboe reports 2,407 mould and yeast counts made for 74 creameries. There was an increase in the analyses made of defective butter, tainted cream and polluted well water. The tracing of the causes

of deterioration in butter from certain areas occupies a great deal of time, and serious losses have been prevented by safeguards suggested as a result of the laboratory reports. The mould and yeast service, which is partially self-sustaining, has resulted in a remarkably low yeast and mould count in all Alberta creamery butter.

PRINT GRADING.

The enabling legislation required to permit the Federal Department of Agriculture to grade butter for domestic use in this Province, having been proclaimed, it is of interest to record the inauguration of the new grading system, May 1st, 1935. Commencing on that date, all creamery butter sold in prints must bear upon the carton or wrapper, the official grade marks. Consumers are now assured that the quality as indicated by the grade marks is really guaranteed by the creameries or distributors responsible for all butter sold in the retail trade. This new grading service is being checked by Federal officers, and the buying public have shown such a preference for First Grade butter that it became necessary to find a market outside the Province for the lower grades.

INSTRUCTIONAL WORK.

Members of the staff assisted the Department of Dairying at the University with a number of lecture and laboratory periods for the regular classes during the year. As in former years, the Creamery Short Course, covering a period of three weeks, was conducted jointly by this Branch and the Department of Dairying at the University of Alberta.

Addresses were given on various phases of dairying by members of this staff throughout the year, and butter-makers' conferences were conducted at Edmonton, Camrose, Red Deer, Calgary, and Lethbridge.

STAFF CHANGES.

John Keay, B.S.A., M.Sc., joined the staff May 15th, as Dairy Inspector for the Red Deer District.

W. C. Cameron, Instructor and Inspector, resigned September 1st, to accept an appointment with the Dominion Dairy and Cold Storage Branch, Ottawa.

DATA.

The following tables set forth the details of dairy production for 1935, and statistical information concerning dairying in former years.

MILCH COWS

Year	Cows	Year	Cows
1901.....	46,101	1931.....	385,000
1906.....	101,235	1932.....	424,000
1911.....	147,687	1933.....	406,520
1916.....	277,324	1934.....	461,700
1921.....	432,838	1935.....	464,200
1926.....	436,500		

CREAMERY BUTTER PRODUCTION

Year	Creameries	Lbs. of Butter	Total	Selling Value (Cents per lb.)
1920.....	53	11,821,291	\$6,555,509	(55.45)
1921.....	41	13,048,493	4,543,007	(34.82)
1922.....	54	15,417,070	5,126,843	(33.25)
1923.....	75	17,868,853	5,891,186	(32.97)
1924.....	89	22,339,857	7,069,630	(31.60)
1925.....	99	19,630,101	6,969,059	(35.45)
1926.....	99	19,912,466	6,568,280	(32.96)
1927.....	100	16,179,712	5,765,347	(35.63)
1928.....	100	14,375,686	5,374,456	(37.38)
1929.....	95	16,004,463	5,825,247	(36.39)
1930.....	92	17,716,744	4,968,227	(28.04)
1931.....	93	22,957,922	4,711,231	(20.52)
1932.....	95	21,016,048	3,512,685	(16.71)
1933.....	96	23,852,350	4,308,962	(18.10)
1934.....	96	25,601,447	4,830,793	(18.80)
1935.....	97	23,094,707	4,588,917	(19.90)

FACTORY CHEESE PRODUCTION

Year	Factories	Lbs. of Cheese	Selling Value	
			Total	(Cents per lb.)
1920.....	7	398,750	\$ 110,355	(27.70)
1921.....	10	930,660	200,478	(21.54)
1922.....	14	931,992	183,860	(19.73)
1923.....	13	1,865,608	368,771	(19.77)
1924.....	12	1,714,790	278,478	(16.24)
1925.....	14	1,473,835	306,604	(20.80)
1926.....	15	1,499,983	275,107	(19.00)
1927.....	12	848,511	170,690	(20.12)
1928.....	9	722,048	158,404	(21.94)
1929.....	10	1,001,475	198,047	(19.78)
1930.....	8	1,035,352	175,392	(16.94)
1931.....	10	1,040,588	118,390	(11.38)
1932.....	12	1,439,715	146,177	(10.15)
1933.....	11	1,437,387	149,593	(10.40)
1934.....	11	1,370,425	154,138	(11.20)
1935.....	11	1,364,526	168,280	(12.33)

TOTAL ANNUAL VALUE OF DAIRY PRODUCTS

1900.....	\$ 546,476	1925.....	\$23,002,000
1910.....	7,855,761	1926.....	21,820,000
1915.....	15,895,586	1927.....	20,750,000
1916.....	18,466,311	1928.....	20,350,000
1917.....	24,794,597	1929.....	20,750,000
1918.....	27,500,000	1930.....	18,675,500
1919.....	31,625,000	1931.....	15,750,000
1920.....	34,000,000	1932.....	11,850,000
1921.....	25,500,000	1933.....	12,950,000
1922.....	22,950,000	1934.....	14,391,204
1923.....	22,975,000	1935.....	14,252,500
1924.....	23,208,562		

MONTHLY AVERAGE NET PRICES PAID BY CREAMERIES IN ALBERTA
PER POUND OF BUTTERFAT IN "SPECIAL GRADE" CREAM,
F.O.B. SHIPPING POINT, FOR FOUR YEARS

Month	1935		1934		1933		1932	
	F.O.B.		F.O.B.		F.O.B.		F.O.B.	
	Cents	%	Cents	%	Cents	%	Cents	%
January	18.3	(4.6)	21.25	(4.7)	17.4	(4.6)	18.2	(5.7)
February	21.3	(5.0)	22.65	(5.2)	17.4	(5.0)	13.4	(5.4)
March	20.5	(5.3)	26.85	(5.9)	18.1	(7.0)	16.8	(6.0)
April	19.5	(5.7)	28.65	(7.4)	16.2	(6.5)	16.0	(7.7)
May	19.7	(7.7)	16.25	(11.5)	16.6	(11.8)	12.5	(10.5)
June	16.5	(15.3)	14.15	(16.6)	14.4	(14.1)	11.2	(15.1)
July	15.5	(16.1)	12.65	(16.1)	14.4	(14.3)	10.4	(14.1)
August	15.5	(14.3)	12.65	(12.0)	13.4	(14.1)	15.0	(11.0)
September	16.3	(10.2)	13.15	(7.8)	12.4	(7.5)	17.4	(8.0)
October	18.9	(6.4)	13.65	(5.1)	14.4	(5.8)	17.4	(6.4)
November	21.0	(4.7)	14.65	(3.9)	14.9	(5.4)	17.4	(5.1)
December	21.5	(4.7)	15.65	(3.8)	17.2	(3.9)	17.4	(5.0)
The year	18.01	(100.0)	17.10	(100.0)	15.2	(100.0)	14.4	(100.0)
Six winter months	20.28	(30.0)	22.89	(30.9)	16.8	(32.4)	16.5	(34.9)
Six summer months	16.79	(70.0)	13.89	(69.1)	14.4	(67.6)	13.2	(65.1)

NOTE:—The figures inclosed in brackets represent the monthly percentages of the cream receipts for the year.

AVERAGE TESTS AND GRADES OF CREAM

	1935		1934		1933	
	Lbs.	%	Lbs.	%	Lbs.	%
Cream received	57,777,305	..	62,754,852	..	58,672,769	..
Average Test	..	(33.9)	..	(33.8)	..	(33.7)
Butterfat:						
Table Grade	574,826	(2.9)	416,334	(1.9)	456,387	(2.3)
Special Grade	11,991,878	(61.3)	13,501,951	(63.7)	13,227,873	(66.8)
First Grade	6,123,768	(31.3)	6,488,813	(30.6)	5,447,121	(27.5)
Second Grade	837,609	(4.3)	784,944	(3.7)	648,058	(3.3)
Off Grade	33,237	(.2)	17,411	(.1)	16,487	(.1)
Total.....	19,561,319	(100.0)	21,209,553	(100.0)	19,795,926	(100.0)

REPORT OF THE FIELD CROPS COMMISSIONER

(O. S. LONGMAN)

The 1935 crop season proved to be a serious disappointment to the farmers throughout the Province. A late spring, accompanied by an ample amount of rainfall, gave promise of a very heavy production of cereal and forage crops throughout practically the entire Province. During the summer months, however, certain areas in the prairie section became seriously affected by drought and grasshoppers, with the result that crop yields were greatly reduced by these causes. The greatest disaster occurred on August 16th, when seventy-five per cent. of the crop acreage of the Province was damaged to a greater or less degree by frost, the degree of damage depending upon the stage of maturity of the grain and the severity of the frost. In the central and northern sections of the Province, where crops were still in the green stage, the damage was extremely heavy. In many areas the coarse grains were rendered practically useless for seed purposes.

A number of districts were severely damaged by hail. This particularly applied to the Calgary, Wetaskiwin and Bonnyville districts. The total damage from hail, however, was considered normal.

The one factor that has helped to alleviate the severity of the frost damage is the prevailing higher prices being offered for wheat, as has been established by the Canadian Wheat Board.

In 1934 the production of clover and grass seed was very profitable, and particularly high prices prevailed. However, in 1935, the reverse condition existed, and extremely low prices which are now being offered have had somewhat of a discouraging effect upon the growers of these seed crops. A number of growers are carrying their stocks over in the hope of securing higher prices.

Throughout the gray soils area of the Province there is a keen interest in the development of malting barley, and for this reason the barley varieties O.A.C. 21 and Peatland, being particularly suitable for malting, are most popular.

The erection of a thousand-ton sugar-beet factory at Picture Butte, which will be in operation in 1936, is an indication of the value and importance of this crop in the irrigated sections of the southern part of the Province. The production of sugar beets is growing in favour and is making a definite contribution to the stability of farming in those areas.

The estimated acreage and production of the seven leading field crops in the Province are as follows:—

	Acreage	Production
Wheat	7,500,000	105,200,000 bushels
Oats	3,102,000	94,611,000 bushels
Barley	920,000	18,860,000 bushels
Rye	218,100	2,244,000 bushels
Alfalfa Seed	..	160,000 pounds
Sugar Beets	14,100	136,000 tons
Hay and Clover	295,000	465,600 tons
Flax	19,400	118,000 bushels

WEED CONTROL.

The administration of *The Noxious Weeds Act* was carried on during the 1935 season. The Province was divided into 2 weed inspection dis-

tricts; first, that portion of the Province south of Calgary; secondly, that area north of Edmonton.

Eight Weed Inspectors were appointed to enforce the Act in the 35 Improvement Districts within the Southern Inspection District. Lack of funds, however, permitted the employment of only 2 Inspectors in the Northern Inspection District.

In addition to the 10 Weed Inspectors, 3 special Weed Supervisors were appointed to assist municipalities with their weed control programme, and to co-operate with Municipal Inspectors.

The control of Perennial Sow Thistle and Canada Thistle on the accrued lands along lake-fronts has offered many difficulties in the past. A new policy has now been inaugurated, and considerable progress has been made. The Government is leasing these lands to the adjacent land-owners for a period of 10 years, at the nominal rental of 2 cents per acre per year. In addition to the rental, the farmer agrees to control the thistles. The method of control recommended is the seeding of sweet clover, brome and other clovers or grasses; then using the land as pasture.

The lakes affected by this policy are Beaver Hill Lake, Bittern Lake, Buffalo Lake, Hay Lakes, Whitford Lake, Wavy Lake, Hastings Lake, Cooking Lake, Joseph Lake, Miguelon Lake, Ministik Lake, Red Deer Lake, and a number of smaller lakes.

The project is not completed, but nearly 200 leases have already been taken, covering nearly the entire areas around Beaver Hill and Bittern Lakes, and the principal areas around the other lakes mentioned.

INSECT CONTROL.

The grasshopper outbreak of 1935 was a continuation of the infestation which began in 1931. Fortunately, however, the severity of the attack was greatly reduced from 1934, although the area affected was almost identical with that of the previous year.

The assistance and co-operation given by Prof. E. H. Strickland of the University of Alberta, and by Mr. H. L. Seamans, of the Dominion Entomological Branch at Lethbridge, and his staff, was appreciated, and is acknowledged gratefully. The campaign was quite successful in as much as it is estimated that about 22% of the crop menaced was saved. This represents about 440,000 acres, or at 10 bushels to the acre, and wheat worth 50 cents per bushel, a saving of about \$2,200,000.00. The total expenditure for the campaign was about \$42,000.00.

A programme to encourage fall cultivation was undertaken in August, as it is becoming more apparent that proper cultural practices are of immense value in grasshopper control.

The following is a summary of operations:—

Number of farmers receiving bait.....	
Acres of crop land.....	5,000,000
Acres of crop-land menaced.....	1,933,526
Number of stations operating.....	60
Amount of poison bait spread.....	8,869 842 lbs.
Number of farmers receiving bait.....	5,666
Estimated damage	8.8%
Estimated crop saved.....	22.8%
Bait supplies used: Sawdust.....	4,715 000 lbs.
Bran	2,062 800
Sodium Arsenite	7 145 gals.
Sodium Fluosilicate ...	110 950 lbs.
Paraffin Oil	3 285 gals.
Molasses	14,000 lbs.

JUNIOR GRAIN CLUBS.

The Junior Grain Club programme was increased by twenty-one projects. Additional applications for organization from twenty other districts were deferred until 1936. Sufficient registered or certified seed to sow four or five acres is supplied to club members on payment of a membership fee. The additional cost of the seed is taken care of by the following sponsors:—Wheat Clubs, Alberta Wheat Pool; Oat Clubs, United Grain Growers; Barley Clubs, Canada Malting Company; Flax Clubs, Alberta Linseed Oil Company. The seed is multiplied under the supervision of Department field-men for use on club members' own farms and for sale in the district.

Grain Clubs were organized as follows:—

	Number of Clubs	Membership
Wheat	64	1,022
Oats	34	530
Barley	24	357
Flax	3	27
Potato	4	45
Corn	1	12
Total.....	130	1,993

There were 57 field days and 82 seed fairs held in connection with the programme. The cost of efficiency prizes was taken care of again by the sponsoring organizations. This prize goes to the highest ranking member in each club and consists of a trip to the Provincial Seed Fair and Short Course.

Jack Allsop, Wembley; Ian Smith, Wolf Creek; and Joe Kovich, Lethbridge, were awarded Scholarships at one of the Schools of Agriculture for general proficiency in club work. Justyn Rigby and Arthur Mackey of the Grande Prairie Club represented the Province at the National Grain Judging Competitions at Toronto. This team won first placing.

SEED EXCHANGE POLICY.

The policy whereby field inspected seed is exchanged for market grain was continued in 1935. The seed is cleaned to a high standard of purity by growers and shipped to groups of farmers requiring a change of seed. Dominion Seed Branch officials inspected the standing crops for purity of variety, and the loaded cars for admixtures of other grains and weed seeds. The freight charges were prepaid by the Dominion Government. Supervision of unloading was arranged by grain companies who also followed farmers' track prices for any grain delivered in exchange for seed. The Alberta Seed Growers' Association handled the financial arrangements. In the exchange, a premium of approximately thirty per cent. was allowed the grower.

Shipments were arranged as follows; wheat, 14,724 bushels; oats, 39,995 bushels; total car-loads, 35; number of farmers securing seed, 792.

In addition to the carload shipments mentioned above, the freight was prepaid by the Dominion and Provincial Governments on shipments of registered and certified wheat and barley by local freight. Approximately 15,000 bushels of improved seed was moved under this arrangement.

SEED EXHIBITIONS AND COMPETITIONS.

The Provincial Seed Show was held in Edmonton, February 14th to 17th, 1935. An Agricultural Short Course was held in conjunction with the Fair under the joint auspices of the Department of Agriculture and

the University of Alberta. The Hudson's Bay Company kindly arranged for space in their store building for both the Show and the Short Course. There were 228 entries in the open classes and 90 entries in the junior classes.

Alberta exhibitors were given assistance in assembling and shipping exhibits to the International and the Royal Seed Shows. Shipping costs were paid to the International Hay and Grain Show, Chicago, on all approved exhibits, and on registered seed, and junior exhibits to the Royal Winter Fair, Toronto. Prize money won at Chicago was duplicated by the Department, and exhibitors winning championships were awarded an honorarium.

The Province's record at these shows is as follows:—

ROYAL WINTER FAIR, TORONTO	
Number of entries.....	22
Number of prizes won.....	15
Number of championships.....	5
INTERNATIONAL GRAIN AND HAY SHOW, CHICAGO	
Number of entries.....	55
Number of prizes won.....	51
Number of championships.....	13

ALBERTA SEED GROWERS' ASSOCIATION.

The officers of the Alberta Seed Growers' Association for 1935 were: President, J. H. B. Smith; Vice-President, H. W. Wright; N. Linden, A. M. Smith, R. R. Baird, T. H. Howes, O. S. Longman, J. Allsop, G. Hutchinson; Secretary, E. H. Buckingham.

This Association co-operates with the Branch in promoting the production and distribution of pure seed. In addition to car-loads handled under the Seed Exchange Policy, sales of the following quantities of registered and certified seed were arranged for growers:—

Registered and Certified Wheat.....	5,520 bushels
Registered Oats	3,800 bushels
Registered Barley	1,500 bushels
Peatland Barley	6,839 bushels
Grass and Clover Seed.....	4,500 pounds

CROP IMPROVEMENT FIELD DAYS.

In July and August, 18 field days were held under the auspices of the National Agricultural Crop Testing Plan. Several hundred samples of wheat were submitted by farmers through their local elevator agent for testing purposes. These samples were planted in rod rows at central points, and during the field day meetings, determinations and demonstrations made with respect to the purity of variety of each sample. It was found that many farmers were growing varieties of inferior milling value, and in many cases the varieties were badly mixed.

FORAGE CROP PROGRAMME.

The chief forage crop policy consists of a seed distribution plan financed by the Dominion Department of Agriculture, whereby farmers can obtain grass and clover seed by repayment inside of two years at one-half the cost of the seed. Approximately 750 farmers took advantage of this policy in the spring of 1935. The farmers obtaining seed were interviewed and their seed plots inspected by field-men of this Department.

Generally speaking, the acreage devoted to forage crops has increased considerably. Alfalfa and clovers show the greatest increase in acreage.

SEED DRILL SURVEY.

In the spring of 1935, Agriculturists obtained in their respective districts a total of 298 samples of wheat directly from farmers' seed drills.

The samples were planted at the Schools of Agriculture, where their purity of variety was determined by competent cerealists. Part of each sample was analyzed by the Dominion Seed Branch for admixtures of impurities, and germinated.

Reports went out to each farmer co-operating, with information respecting the purity of variety of his seed, the impurities found, and recommendations where necessary.

ALBERTA POTATO GROWERS' ASSOCIATION.

The Alberta Certified Seed Potato Growers' Association held their annual meeting at a field day gathering at the University of Alberta on July 16th, 1935.

The following officers were elected: President, Chas. Scott; Vice-President, T. H. Howes; Directors, W. C. Dowdell, J. A. Bradley, W. R. Rigney; Secretary, E. H. Buckingham.

DISTRICT SEED CLEANERS.

The portable grain cleaners have continued to render useful service in their respective districts. These cleaners were purchased by District Associations with the aid of grants from the Dominion and Provincial Departments of Agriculture, the District Associations contributing one-third of the total cost of the assembly.

The summary of work done in 1935 is approximately as follows:—

Location	Hours operated	Bushels cleaned
Fairview	600	34 560
Grande Prairie	550	35,000
Lacombe	380	24,850
South Edmonton	400	25,000
Sangudo	350	21 500
Vegreville	991	35,480

ALBERTA PROVINCIAL SEED BOARD.

Several meetings of the Board were held during 1935.

The members are: Messrs. G. M. Stewart, H. A. Craig, Jos. H. B. Smith, P. J. Rock, Dr. W. H. Fairfield; Secretary, O. S. Longman.

AGRICULTURAL RELIEF.

The agricultural relief programme of 1935 was the most extensive of recent years. It was a continuation of the policies of 1934 applied to a larger area, as feed conditions became more acute.

The Dominion Government and railways assisted in bearing a portion of the freight costs, and during the year 2,072 cars of feed were shipped.

The Fodder Loan Policy, which provided assistance in the form of feed to indigent farmers, was continued until May 31st, 1935. In the fall of the year, further Government assistance was provided in those districts which suffered drought, frost and hail damage. Both the Free Freight on Feed and Fodder Loan Policies were re-established, and shipments began about November 1st, 1935.

The following is a summary of the shipments made during 1935:—

SPRING		
Free Freight Policy—Grain.....	51 cars	
Fodder	56 cars	
Fodder Loan Policy—Grain.....	745 cars	
Fodder	1,005 cars	
Total		1,857 cars
FALL (To December 31)		
Free Freight Policy—Grain.....	30 cars	
Fodder	25 cars	
Fodder Loan Policy—Grain.....	96 cars	
Fodder	64 cars	
Total		215 cars
GRAND TOTAL		2,072 cars

Seed.—In the spring of 1935, seed grain was distributed in the drought areas under *The Seed Grain Advances Act*. The total quantities distributed were as follows:—

Wheat	422,112 bushels
Oats	374,004 bushels
Barley	22,833 bushels
Rye	922 bushels
Flax	115 bushels

Early in the fall of 1935, it was apparent that the Province faced a very serious shortage of seed, due to severe frost on August 16th, which damaged crops from Calgary north. A survey was immediately started to determine the quantities of seed required, and the Government undertook to purchase oats and barley to be stored at Edmonton and Calgary for spring delivery. By December 31st, 1935, approximately 270,000 bushels of oats and 20,000 bushels of barley had been purchased. No wheat was bought as the survey indicated that most districts would have sufficient wheat for seed.

Potatoes and Vegetables.—The demand for potatoes and vegetables in the drought area decreased greatly in 1935.

In the spring of the year, 16 cars of potatoes were purchased for shipment to the drought area. In the fall of the year another 12 cars of potatoes and vegetables were purchased and shipped. Distribution of these shipments were taken care of by the Relief Branch of the Department of Municipal Affairs.

Fuel Relief Policy.—Under this policy, farmers with tractors were permitted to secure a limited amount of aid to operate their tractors during the seeding of the crop, and for summer-fallow preparation.

A maximum loan of \$135.00 was allowed. About 1,250 farmers took advantage of this policy at a total cost of nearly \$83,000.00.

Movement of Settlers.—The movement of settlers from the drought area was considerably lighter this year than in the past few years.

Total number of movements.....	214
Number of cars.....	378
Number of half-fare passengers.....	148
Number of free passengers.....	105
Number of horses.....	1,390
Number of cattle.....	1,557
A few sheep and swine.	

Twelve of these movements were to the Peace River area, and the balance scattered over a wide area, with Edmonton as the centre.

RELIEF SETTLEMENT PLAN.

The above plan of settlement has been administered by the Department of Agriculture since the fall of 1932, with funds provided by the Dominion

and Provincial Governments and the participating Municipalities. This plan provides for a loan of \$600.00, shared evenly by the three contributing governments, to be spent over a period of two years for the establishment of each family accepted for settlement.

Applications are submitted to a Provincial Advisory Board by the Municipality from which the family is in receipt of relief. The Advisory Board is made up of representatives of the following organizations: the Dominion Government, the Provincial Government, the Canadian National Railways, and the Canadian Pacific Railway. This Board has held 43 meetings in Edmonton and 3 in Calgary during the past year, and has dealt with 165 applications. The Board has also dealt with 107 land appraisal reports, of which 70 were approved for settlement and 37 were rejected.

Applications for a continuation of sustenance during the third year of settlement have also been referred to the Board on behalf of approximately 250 settlers. The sustenance allowance during the third year is contributed in the same manner as the original loan, up to an amount of \$100.00 where necessary.

It has been considered advisable during the past year to arrange for an increase in the monthly sustenance allowance of large families. Such an increase has been arranged with most of the participating Municipalities, and is contributed equally by the Province and the Municipality.

The number of placements made under this policy have been comparatively small during the past year, as most of the suitable families from the larger cities have previously had an opportunity of settlement. This year's movement has shown a larger percentage than usual from rural Municipalities. In fact, the smaller centres seem to be about as keenly interested in the plan as they were during the first years of its operation. The following table shows the number of families settled each year, with the total, to December 31st, 1935:—

Year	Number of Families
1932.....	51
1933.....	314
1934.....	223
1935.....	63
Total.....	651

The following table indicates the Municipalities from which settlers have been accepted:—

Municipality	Number of Families
Cities—Edmonton	295
Calgary	184
Medicine Hat	33
Lethbridge	16
Wetaskiwin	4
Towns (7)	20
Villages (6)	8
Rural Municipal Districts (24).....	52
Local Improvement Districts (7).....	17
Turner Valley District.....	22
Total.....	651

All settlers have been required to make their own arrangements for acquiring land. About 50 per cent. have taken homesteads, and the remainder have arranged for purchase on deferred payments, or have leased. A few have had equities in land previous to settlement, and have settled on their own holdings.

Inspectors from this Department have visited most of the families during the past year. Reports of this work show over 50 per cent. of the total number of settlers as having "good" or "fair" chances of success. Details of this classification are as follows: "Good", 23%; "Fair", 29%; "Doubtful", 16%; "Poor", 5%; and "Abandoned", 27%. It should be noted in connection with the abandonments that about one-fifth of these have resulted from settlers obtaining some more suitable way of making a living. This means that about 22 per cent. may be considered as failures up to date. We may assume that this figure will increase as indicated by the above classification, but present indications would lead us to believe that the Settlement Plan will show as large a measure of ultimate success as was originally anticipated.

At December 31st, 1935, approximately 50 families were self-supporting. We consider this a very encouraging showing, as most of the settlers are still eligible for assistance, and many have experienced an unfavourable season for farming operations during the past year.

REPORT OF THE POULTRY COMMISSIONER

(G. M. CORMIE)

During the year just ended, poultry meat prices have materially advanced over the previous three or four years. In the instance of turkeys, the buying price was practically 100% higher than in 1934. A comparison of the figures shows a buying price in 1934 of 9 to 11 cents, while in 1935 it was 19 to 22 cents. The added encouragement through better prices will undoubtedly do much to encourage poultry raisers in their efforts to improve the quality of their product. Egg prices, too, during the year showed an encouraging increase.

The poultry crop, however, was materially lowered, largely due to the depletion of the flocks following a number of years of buying prices below cost of production. In the instance of turkeys, it is estimated that there was not more than 60% of the normal crop marketed.

Probably the most important development during the year was the working out of the Hatchery Regulations, which brought under control all commercial hatcheries, and straightened out a number of the evils that had worked into the business; and at the same time, through the system of inspection and blood-testing all flocks, eliminated many poor flocks that formerly supplied hatcheries, and lessened the number of sickly, undesirable specimens from those flocks qualifying to supply hatcheries.

Over 100,000 birds were approved and blood-tested, which constituted an ample supply for the incubator capacity of the Province, which is estimated at slightly under one million eggs. The records obtained through the Hatchery Regulations show that there were 1,272,686 eggs set, from which were produced 803,312 chicks.

The Regulations are enforced under the joint auspices of the Federal and Provincial Departments of Agriculture, the Federal Department being responsible for the inspection of the hatcheries, while the flocks come under the control of the Provincial Department of Agriculture.

These Regulations require that all flocks supplying eggs to hatcheries be culled and blood-tested. All eggs set must average 24 ounces to the dozen. Male birds heading such flocks must also be approved and blood-tested, and true to type and body characteristics as required by the particular breed and variety. No hatchery can get a permit to operate that does not comply with these requirements. They must be in a financially sound position; operate a clean, sanitary hatchery, and their equipment must be of a standard design known to be workable.

Under the Regulations, eggs from tested and non-tested flocks may not be hatched in the same incubator or in the same hatchery. Certain hatcheries, however, are licensed to do custom hatching only, in which case they do not come under the provisions of the Regulations requiring blood-testing.

It is with satisfaction that we report splendid co-operation from the licensed hatcheries in the Province, and a sincere effort on the part of the hatchery-men to turn out a high quality chick in keeping with the quality of stock from which their supply is drawn.

POULTRY ORGANIZATIONS.

Various poultry organizations, representing the different classes of breeders, have continued during the year in a normal position. The Alberta Poultry Federation, which is the official organization of the Province, and includes in its membership every poultry association in the Province of any recognized standing, as well as private breeders not associated with any club or organization, has continued to make itself felt in an advisory way. The usefulness of the Poultry Federation in bringing together various factions of the industry which may have misunderstandings and disputes, and in the representations which it has made to the Government, and the help it has given to the poultry industry, continues to justify its existence.

The Federation has again published its annual catalogue outlining the work of the association, listing the outstanding breeders of pure-bred stock, both chickens and turkeys, and carrying a lot of useful articles relative to up to date poultry raising. We wish once more to give credit to Mr. C. J. Ford, K.C., of Calgary, President of the Federation, and his Board of Directors, for the intelligent manner in which they have handled the major problems confronting the industry.

TURKEY IMPROVEMENT POLICY.

Due to a number of years of continued low prices, the number of turkey breeders belonging to the association and having their stock inspected and banded for distribution, has been greatly reduced.

The encouraging prices, however, during 1935, have brought new life to the association and greater encouragement to its members to continue in their effort to improve the strains of turkeys being used for breeding purposes in the Province. The demand for turkey breeding stock at the end of 1935 was exceedingly strong, and there is every likelihood that there will be a shortage of inspected and banded breeding turkeys.

During the year, shipments have been made to other countries, including the United States and New Zealand, as well as to many of the other provinces in the Dominion.

POULTRY PROMOTION.

There are six main poultry promotion schemes undertaken in the Province. These, as reported in other years, are as follows:—

1. Turkey Improvement Plan.
2. Alberta Accredited Flocks.
3. Alberta Winter-Tested Flocks.
4. Alberta Hatchery Approved Flocks.
5. Alberta Approved Males.
6. Blood-Testing for Pullorum Disease.

Each of these various groups of producers undertaking their particular plan of work has shown satisfactory progress during the past year. There has been no appreciable increase in the number of such flocks, but at the same time there has been no appreciable decrease.

With improved market prices, we look forward to a considerable increase in the membership in each of these groups. The value of their work is undisputed, particularly in their efforts to increase and improve the quality of flocks supplying eggs to the hatcheries.

For details regarding these various improvement schemes, please refer to the report of the Poultry Branch for 1934.

BLOOD-TESTING FOR PULLORUM DISEASE.

This branch of the work is worthy of special mention, in as much as it is a part of the Hatchery Regulations. The work continues to be carried on by the Poultry Branch of the Alberta Department of Agriculture, in co-operation with the Provincial Laboratory, University of Alberta, and the Dominion Veterinary Research Station at Lethbridge.

The Poultry Branch undertakes to collect the blood samples, at the same time culling and selecting the birds, while the two laboratories above mentioned make the actual test of the blood samples.

Satisfactory progress has been obtained in the elimination of this disease causing such heavy losses in poultry.

Owing to the comparatively high cost of this service, it was found necessary to raise the fee to the producer from $2\frac{1}{2}$ to $3\frac{1}{2}$ cents. As formerly, flock owners are required to pay for the cost of blood-testing at the time it is done, and they must agree to dispose of the reactors and all untested birds on the premises.

Anyone desiring to sell hatching eggs and wishing to have his flock blood-tested, should communicate with the Poultry Branch, Alberta Department of Agriculture, by September 15th of each year.

EXTENT OF THE INDUSTRY.

During the year just ended, the people of Alberta consumed most of the production of eggs and poultry. While the importation of eggs from British Columbia during the season of low production in Alberta was slightly higher than last year, the total imports from that Province amounted to two carloads. During the season of flush production in Alberta there were some eggs exported, but the quantity was greatly reduced from that of other years. In poultry meat the Province had an exportable surplus of approximately 50 carloads. It is interesting to note that in the peak year for exportable surplus, 1929-30, there were roughly 250 carloads of eggs and poultry exported. The serious drop in the exportable surplus is due, in large measure, to the low prices prevailing, resulting in the farmers depleting their flocks, and, in part, to the serious feed situation which has developed as a result of frost and hail.

LECTURES, DEMONSTRATIONS AND LITERATURE.

During the year, poultry field days, agricultural short courses, special poultry meetings and lectures were attended by officers of the Poultry Branch. The field days were particularly appreciated, the attendance in most cases being double that of the previous year. The contacts made at these public meetings provided a large number of people with an opportunity of discussing their various poultry problems.

Bulletins and pamphlets dealing with housing, feeding and management, disease control, egg and poultry grading regulations and hatchery regulations, were distributed in very large quantities, and were made available to anyone asking for same, free of charge.

POULTRY FARM.

The Demonstration and Experimental Poultry Farm, adjoining the Oliver Mental Hospital, had a successful year. This farm constitutes a source from which farmers of the Province are able to secure new blood lines in breeding stock in the form of mature male birds, hatching eggs, baby chicks and turkeys. Many of the better flocks in the Province have been built up from foundation stock obtained at Oliver.

Practically all of the birds are trap-nested, and sufficient pedigree breeding is carried on to provide an ample supply of birds for our own breeding pens. The following varieties of poultry are kept at this institution:—

Bronze Turkeys, .
Barred Plymouth Rocks,
White Plymouth Rocks,
White Wyandottes,
S. C. White Leghorns,
S. C. Rhode Island Reds.

The flock of Ringneck pheasants kept for propagation purposes was considerably reduced since it was found that the birds do much better in smaller numbers. In co-operation with the University of Alberta, a number of experiments are in progress. A report of such experiments is usually made available by the Poultry Branch of the University.

PONOKA MENTAL HOSPITAL POULTRY PLANT.

Nineteen-thirty-five proved to be the most satisfactory year yet experienced in the operation of the plant at Ponoka. While this plant is maintained and under the control of the Department of Health, the Poultry Branch co-operated in an advisory capacity, and this year for the first time the requirements of the eggs and poultry for the institution have been provided from their own plant. In this connection, we wish to pay special tribute to Mr. Clarence Carleton, Poultry Plant Manager.

We also wish to pay special tribute to the District Agriculturists, and to the officers of the Poultry Branch, who, through their faithful and conscientious service and their courteous contacts with the people of the Province, have added greatly to the efficiency of the work of this Branch.

We also wish to express our appreciation of the splendid support received from the various poultry organizations in the Province.

REPORT OF THE GAME COMMISSIONER

(S. H. CLARK)

There is encouraging evidence that our rich natural endowment of wild life is receiving increasing support for its conservation and restoration. The Government agencies who are charged with the responsibility of protecting and restoring this natural resource, are greatly assisted by the Fish and Game Protective Leagues who act as sponsors of public opinion. Through various programmes of education the public is becoming more conscious of the fact that our big game, game birds and fur-producing animals are an asset which we hold in trust with the obligation that future generations should inherit their share of this valuable resource.

Conservation is best applied by making a wise use of wild life and to so regulate the taking of animals and birds to assure a sufficient supply of breeding stock for propagation.

In addition to the kill by sportsmen, or by those who take game to satisfy the necessities of life, our valuable animals and birds suffer loss by predatory animals, disease and other natural causes. The estimate of such loss must receive careful consideration in applying protection principles through *The Game Act* and its Regulations.

Agricultural development has advanced into districts which have maintained ample supplies of big game animals. There are large areas of Alberta which are entirely unsuitable for agricultural development and are capable of producing an ample supply of game and fur-producing animals if given proper protection. In some areas adjacent to settlement, game has been excessively killed, and it is found necessary to protect certain areas by establishing Game Preserves, in order that the settlers may be assured of a continuing supply for future use. Alberta is particularly well favoured by having large National Parks, Game Preserves and Sanctuaries. The addition of small Game Preserves where the wild life is protected for short periods, to permit its increase, give added assurance that the big game animals will not be entirely depleted in these areas, or driven back into rural districts.

Over a period of years, the big game animals had reasonable protection in the Forest Reserves. Most of the hunting in these areas is done by non-resident hunters who take only the adult male animals for trophies. It is obvious that the taking of the older animals tends not only to improve the species but increases their numbers, and a very satisfactory condition maintains in the mountain sections where these Forest Reserves are established.

Some areas which are adjacent to settlement, and others which are available by the improved road conditions, have been hunted excessively, and the moose in particular have been greatly reduced in numbers in these districts. The deer thrive in and around settlement if given reasonable protection, and many farmers have assisted greatly in their protection, appreciating the recreational value of these animals.

It is also most satisfactory to know that the elk have continued to increase, and the open season, which was provided for in the Pembina-Brazeau Elk Reserve and adjacent areas, has been the cause of scattering these animals into other areas which are suitable for their propagation.

As the open season for antelope in 1934 did not produce the desired results, due to bad weather conditions, another open season was declared under similar Regulations from November 1st to the 11th. Again the heavy snow-storms and drifted roads prohibited the taking of these animals, and it was found necessary to re-open the season from the 2nd to the 10th of December. A study of this situation reveals that the Regulations providing for this open season must be amended to reduce the losses from wounded antelope which were left to die on the range by the hunters. This matter will receive careful consideration, and adjustments made accordingly, should conditions warrant another open season.

Migratory Game Birds.—The ducks and geese, which have been greatly reduced in numbers over a period of years, had a more favourable season. Hatching conditions were somewhat improved, and Mallards in particular returned from the northern breeding grounds in increased numbers over the previous year. In addition, the United States Federal Government, in co-operation with the various states, applied drastic shooting regulations. These prohibitions included the use of live decoys, baiting, shooting after 4 p.m., plugging of pump-guns and automatics to three shells, reduced bag limits, and an entire close season on some species. It is estimated that the kill of ducks and geese after they had gone south to their wintering grounds was reduced nearly fifty per cent. over previous years. This will be the cause of sending increased numbers of breeding stock to the prairie provinces in the spring, and should aid greatly in restoring the duck population.

Upland Game Birds.—The grouse family have been greatly reduced in numbers, due mostly to natural causes. As the rabbits have died off in most of the north country, the various predators, including the bird-eating hawks, horned and snowy owls, and coyotes, migrated south and found very little for their subsistence except the game birds. In addition, the skunks have increased greatly throughout the settled areas, and destroy large numbers of nests and young. A wet spring also produces unfavourable hatching conditions. It was evident that these birds had been depleted in such numbers to justify a close season except on a small area in the foot-hills, which was open for a few days for prairie chicken. A close season on the grouse family throughout Alberta will be necessary for the next few years until the supply has been replenished.

The Hungarian partridge throughout central Alberta have also been greatly depleted in numbers. Two bad hatching springs have reduced the increase, and the predatory birds and animals have aided in this depletion. In the area south of Calgary and Lethbridge, these birds have continued to increase, and it is hoped that more favourable hatching conditions will restore their numbers in the areas where they were originally plentiful.

Fur-producing Animals.—The cycle in the fur animals is again reaching a low point. The supply of fur-bearers is dependent somewhat on the feed which they may secure, and as the rabbits have completely died off over most of northern Alberta, there are greatly reduced numbers of fox and other fine furs which depend on the rabbits for their food. It is, therefore, a time when increased protection should be given to the breeding stock in order that a sufficient number may remain to re-populate the large areas of the Province which produce very little revenue except from the returns from trapping pursuits.

Squirrel pelts continue to reach the market in the largest numbers, and somewhat over a million pelts were exported from the Province. A total of this and the previous year brings the number to two and one-half million. These little animals were taken by the trappers and those who devote their time entirely to hunting squirrels. It is quite likely that the numbers to be taken the next year will be greatly decreased, and it may be necessary to prohibit entirely the shooting of squirrels, which will conserve the supply to some extent. It does not appear to be practical to prohibit the taking of squirrels entirely, as these animals frequently get in traps which are set for marten, weasel and other small fur-bearing animals. The situation must necessarily be carefully considered to assure a continuing supply.

The total number of animals taken during the fur year extending from July 1, 1934, to June 30, 1935, amounted to 1,850,625, which is a decrease in numbers of about four hundred thousand pelts. The average values were a little higher than the previous year, so that the total revenue derived from the sale of furs approached one and a half million dollars.

ALBERTA FUR PRODUCTION FOR THE YEAR JULY 1, 1934-JUNE 30, 1935

Kind of Fur	Total No. of Pelts	Average Value per Pelt	Total Value
Badger	1,101	\$ 7.50	\$ 8,037.30
Beaver	1,996	6.50	12,974.00
Wolverine	69	3.25	224.25
Squirrel	1,179,165	.09	106,124.85
Ermine (Weasel)	127,383	.47	59,870.61
Otter	98	13.50	1,323.00
Wolf (Prairie)	28,476	5.00	142,380.00
Wolf (Timber)	192	4.00	768.00
Lynx	2,492	15.50	38,626.00
Marten	574	11.50	6,601.00
Skunk	20,343	.70	14,240.10
Bear	151	1.00	151.00
Fisher	43	50.00	2,400.00
Fox (Silver Black)	14,027	34.00	476,918.00
Fox (Cross)	6,676	18.00	120,168.00
Fox (Red)	13,908	7.00	97,356.00
Muskrat	404,423	.80	323,542.40
Mink	9,274	5.50	51,007.00
Mountain Lion	2		
Ground Hogs	150		
Woodchucks	12		
Fox (Blue)	394	20.00	7,880.00
Fox (White)	42	16.50	693.00
House Cats	526	.12	63.12
Bob Cats	4	3.00	12.00
Raccoon	31	2.25	69.75
Rabbits	38,560	.08	3,084.80
Fitch	503	.30	15.90
	<u>1,850,625</u>		<u>\$1,474,529.48</u>

During the last year, there has been an entire close season on beaver throughout the Province, with special permits issued in the southern part of the Province where damage was being done by these animals. The close season on muskrat south of the North Saskatchewan River is also being continued, with special permits being issued in the regular way. It is believed that, as water levels raise and lakes and sloughs become more normal, the muskrats in the south of the Province will increase rapidly, and may reach a sufficient supply to justify a short open season.

MUSKRAT AND BEAVER PERMITS ISSUED—1934-1935

Muskrat Permits issued.....	378
Muskrats reported taken.....	6,076
Beaver Permits issued.....	24
Beavers reported taken.....	105

Revenue.—The revenue for the fur year ending June 30, 1935, has maintained its level surprisingly well, considering the decrease in the

number of fur animals which have been marketed. A close supervision of the export of pelts has been maintained, and the Department is receiving an increasing co-operation with the fur trade in the licensing and collection of fur tax. The following shows the total gross revenue from the various sources:—

Resident Bird Game.....	\$ 21,467.00
Resident Big Game.....	11,896.00
Fur Tax	74,289.23
Various Licenses, etc.....	25,817.41
	\$133,469.64
Total Commissions Paid:—	
Game Licenses	\$ 4,155.95
Fur Tax	4,731.24
	\$ 8,887.19

Fur Farming.—The number of licensed fur farmers continues to increase, and this year shows a total of 534, with an increase in the number of animals kept on the fur farms of four thousand. Already the value of the fur animals under licensed fur farms totals over a million dollars. There is an increasing interest in this industry, and the quality of the animals kept is steadily improving. As there is a world market for fox and mink pelts which is likely to continue and increase, the outlook for those engaged in fur farming is very bright. The following shows the total of the various species of fur animals on the licensed fur farms:—

Badger	12
Beaver	409
Coyote	14
Fisher	17
Fitch	223
Fox (Blue)	651
Fox (Cross)	1,309
Fox (Red)	297
Fox (Silver)	27,615
Fox (White)	9
Marten	89
Mink	8,031
Muskrat	15,391
Rabbit	163
Raccoon	104
Skunk	4
	54,818

Destruction of Crows, Magpies and Gophers.—An increasing interest is being maintained in the destruction of these pests. The Fish and Game Protective Associations have co-operated, and in many cases have given bounties and prizes in addition to the prizes awarded for this Competition. It has been proven by competent observers that the crows destroy about one-third of the nests of the hatching migratory water-fowl. Magpies have also increased throughout the agricultural section of the Province, although very satisfactory numbers of eggs are taken in the Competition. Magpies, being very wary birds, are extremely hard to shoot. The result of the Competition shows as follows:—

Crows and Magpies.....	45,705
Gophers	670,616
Crows' and Magpies' Eggs.....	383,649

Total destroyed by school children:—

Crows and Magpies.....	31,662
Gophers	447,517
Crows' and Magpies' Eggs.....	351,820

Total destroyed by adults:—

Crows and Magpies.....	14,043
Gophers	223,099
Crows' and Magpies' Eggs.....	31,829

Fur Marketing Service.—For the benefit of trappers and fur farmers who have no satisfactory means available for the marketing of their pelts, as well as for the disposal of confiscated furs and those taken under special permits, the Fur Marketing Service has been continued. The following is the result of sales and shipments:—

Total Sales	\$16,745.07
Number of Shippers.....	626
Number of Shipments.....	887

REPORT OF THE PROVINCIAL APIARIST
(S. O. HILLERUD)

The season of 1935 was unfavourable to bee-keeping, and all districts report low colony production averages. The total production of honey is estimated at 1,100,000 pounds, with a value of \$99,000.00, as compared with a surplus of 1,500,000 pounds of honey valued at \$150,000 in 1934. The total production only partly reveals the actual state of the industry, for the unusual returns of 1934 led to expansion on the part of practically all established commercial bee-men and an influx into the field of numerous beginners, many of whom started on far too large a scale.

PACKAGE BEES.

Although the package bees of 1935 were decidedly better than those of the last two years, the situation is far from satisfactory. Complaints regarding large numbers of drones and old bees in packages were common, and a high percentage of package queens were superseded before the flow. Mr. Chalmers reports lack of uniformity in package queens in northern apiaries, and many mismated queens.

The Alberta Beekeepers' Association, which has been particularly active regarding the Regulations of *The Fruit and Honey Act*, co-operated with Dr. J. E. Eckert, Assistant Professor of Agriculture, University of California, in his preliminary survey of the package bee problem. Mr. J. Graham, President of the Association, and Mr. R. H. Hawthorne, Director, carried on test yards of the various strains of bees and queens. Their results indicated wide variations in strains, but need for closer observations than could be given by commercial bee-keepers was regarded as necessary, and arrangements have been made to carry on a test of 15 strains for a period of three years, all observations to be made by the Provincial Apiarist.

Resolutions regarding suitable quarantine for apiaries in which disease has been found were considered at the annual meeting held in Calgary, October 8th. The District Associations have been handling bees, queens, honey containers and bee-keeping supplies for their members in a very satisfactory manner.

Preliminary studies regarding the cause of package queens and package bee failure were undertaken by Dr. Eckert. He carried out a series of observations on a carload of packages shipped to Lethbridge from California, noting temperature changes, effects of varying ventilation, and other matters of interest.

The Provincial Apiarist arranged an itinerary enabling Dr. Eckert to witness the various methods of installation in commercial apiaries, and attend the annual Day Short Courses, where he discussed package bee problems with the bee-keepers. The more important importers of package bees, the express-men at the main distributing points, and Customs officials were interviewed, and a number of errors in shipping practices were corrected.

PLANT POISONING.

Heavy losses were incurred by bee-keepers in the south-eastern part of the Province, particularly in the Brooks area, through the death of from

fifty per cent. to ninety per cent. of the field-bees during the middle of June. This matter was brought to the attention of the Department by Mr. M. L. Freng, District Agriculturist, and the Provincial Apiarist made a study of conditions. He confirmed the view of local bee-keepers that death was due to a poisonous honey or pollen obtained from vetch, later identified by Dr. Moss as *astragalus pectinatus*. Evidence would indicate that bees having access to other nectar-secreting flowers did not work the *astragalus* to any extent, and losses in apiaries in districts where sufficient nectar was being produced by other plants were negligible. In ordinary seasons there is a dribbling flow from other wild flowers, but during this season the *astragalus* seemed to be the only flower in bloom from June 15th to the 22nd. Apparently severe loss can be avoided by locating apiaries in districts where the plant is not common, or where other nectar sources are available during its period of bloom, although the plant may take a small annual toll of field-bees.

INSPECTION.

	Apiaries Inspected	Colonies Inspected	Apiaries Infected with A.F.B.	Colonies Destroyed
Mr. D. Chalmers.....	150	1 280	8	85
Mr. S. O. Hillerud.....	137	1,918	10	29

EXTENSION.

The bulletin "Bee-keeping in Alberta" was prepared during the early spring.

Six radio talks were given over the Foothills Network.

Thirty-two meetings were held for bee-keepers during the year, with an attendance of 2,300. Three illustrated talks were given to other groups having a general interest in bee-keeping. A number of these meetings were arranged for by the District Agriculturists, Messrs. Asplund, Fontaine and Trembley. The film "The Realm of the Honey Bee" appealed to all.

WEEKLY HONEY REPORTS.

The Apiculture Branch co-operated with the Dominion Department of Agriculture in the preparation of weekly honey reports. District reports were received from the following:—

- D. A. Andrew, School of Agriculture, Vermilion.
- F. Reed, Superintendent, Experimental Farm, Lacombe.
- E. G. Goodhall, Calgary.
- T. H. Luther, Dominion Experimental Farm, Lethbridge.
- W. D. Allbright, Superintendent, Experimental Farm, Beaverlodge.
- C. Elmer Morgan, Brooks.

A number of others sent in reports at irregular intervals.

REPORT ON BOYS' AND GIRLS' LIVE STOCK CLUBS

(S. H. GANDIER, *Acting Director*)

Early last spring the direction of Junior Live Stock Club work was transferred from the Live Stock Branch to the office of the Assistant Deputy Minister.

Most of the responsibility in the organization and supervision of stock clubs is in the hands of the District Agriculturists. The appointment of additional men in April last greatly facilitated the club work during the past season. The opening of more district offices has created a more widespread interest in all of our work with the boys and girls. In some districts we have not been able to meet all requests for new clubs. We wish to acknowledge the valuable assistance contributed by field-men of the Dominion Department of Agriculture, and the Soldier Settlement Board, in organizing and supervising certain clubs, and in judging at many of the club fairs.

This year there has been some decrease in the total number of clubs, there being 66 stock clubs, as compared with 79 in 1934. This reduction was occasioned by the disbanding of a number of the weaker clubs, and was most noticeable in swine clubs, which dropped from 56 to 44. Clubs were conducted at the following points:—

Swine Clubs: Ashmont, Athabasca, Andrew, Barrhead, Bruce, Castor, Coronation, Derwent, Duhamel, Dina, Debolt, Elk Point, Fishburn, Freedom, Greenshields, Holden, Lacombe, Lethbridge, Liberty, Loyalty, Myrnam, McLaughlin, Mundare, Northern Valley, Neerlandia, Orkney, Paradise Valley, Radway, Rimbey, Spedden, St. Paul, Swalwell, Spirit River, South Spirit River, Taber, Three Hills, Vermilion, Viking, Westlock, Wetaskiwin, Willingdon, Wahstao, Wembley.

Beef Calf Clubs: Bonnyville, Crossfield, Falher, Grainger, Hairy Hill, Lacombe Beef Club, Lafond Junior, Lafond Yearling, Legal, Loughed, Lethbridge, Northern Valley, Olds, Simons Valley, Scollard.

Dairy Calf Clubs: Bentley, Didsbury, Edmonton East, Lethbridge, Olds, Red Deer, Westmount.

With the financial co-operation of the Canadian Council on Boys' and Girls' Club Work, junior camps were conducted at Class "A" and "B" fairs at the following points:—Edmonton, Calgary, Lethbridge, Red Deer, Camrose, Vegreville, Vermilion. The total attendance was 564. At some camps only boys were present, and at others both boys and girls. The large majority were Grain and Stock Club members. Besides educational features provided by the fairs, some special instruction was given in field husbandry and animal husbandry, with practical work in stock and seed judging. Where girls were also present, attention was given to certain practical phases of Household Economics. The camps were supervised and conducted by field officers of the Department and teachers of the Schools of Agriculture. At most points the number which could be accepted for the camp was limited by the accommodation. Many applications were received, and the delegates therefore were very carefully selected by the

local committees. It was felt by all concerned with the conduction of the Camps that as an educational feature for our rural boys and girls, they were a very decided success. Fair Boards considered these camps were a valuable adjunct to their programmes.

During the fall months the Junior Stock Judging Contests were held for selection of Provincial champions who would compete at the Royal Fair at Toronto, for Dominion honours. Each supervisor of clubs conducted his own elimination contests, and semi-finals were held at Lethbridge, Lacombe and Edmonton. The following were the resulting Provincial champions:—

Beef Judging: The Lacombe Club, represented by Tom Biglands and Edwin Pethybridge.

Swine Judging: The Dina Club, represented by Burnie Nicholson and Orlan Bratvold.

Dairy Judging: Westmount Club, represented by Noel Heslup and William Haines.

These three teams proceeded to the Dominion Judging Competitions at Toronto, and the first two named succeeded in winning Dominion Championships. It is interesting to note here that the Seed Judging Team from the Grande Prairie Club—Justyn Rigby and Arthur Mackey, also captured the Dominion Championship in Seed Judging; the clubs of this Province, therefore, taking three of the possible six championships at Toronto. This is a record at the Royal Fair for any one Province.

Three issues of the Club Bulletin were published during the past year. The object has been to publish an issue every three months, if possible, as a means of providing club news and instructive articles for the benefit of club members throughout the Province.

Through the winter and spring months, and again in the fall, arrangements were made with the University Radio Station for a schedule of radio talks on subjects that would be interesting and instructive for both Grain and Stock Club members. From January to April an address was given each week. During the fall this was reduced to one address every two weeks. These talks were given largely by the Director and by officers of the Field Crops Branch.

The report on Junior Grain Clubs is not included in this report, since up to the present they have been organized and supervised quite entirely weeks. These talks were given largely by the Director and by officers of the Field Crops Branch.

In most districts during the past year, the Junior Live Stock Clubs have been enthusiastically supported by the older people and various community organizations. We continue to receive many inquiries concerning the commencement of new clubs. An appreciable increase is not looked for in 1936, as it is obvious that the extent of the club work must be largely determined by the number of field-men who are available for its supervision.

REPORT ON SCHOOL FAIRS

(S. H. GANDIER, *Acting Director*)

In 1932 the School Fair Policy underwent certain changes in the interests of Departmental economy. The major portion of services and financial grants from the Departments of Agriculture and Education, which had been contributing continuously for some years, were withdrawn. Those Fair Associations which were able to continue by their own efforts, and without the usual supplies and supervision formerly provided, were encouraged to do so, the two Departments concerned, supplying only judges for the fairs. As a result, up to 1934, School Fairs had decreased in number by almost 50 per cent. from the high record of 139 in 1931. In some districts local organizations such as Boards of Trade, Service Clubs and Agricultural Societies, assisted in keeping the fairs alive.

Last spring certain Government contributions were restored to this branch of junior work, in the form of supplies of garden seed, organizing and supervising assistance, supplies for the conduction of fairs, and an adequate staff of judges, the fairs themselves being responsible for other expenses, such as prizes, etc. As was the custom in former seasons, the Province was divided into two School Fair Districts, the South District being supervised from the School of Agriculture at Olds, and the North District from the School of Agriculture at Vermilion. Mr. G. R. Holeton was appointed as supervisor for the Olds District, and Mr. W. G. Maleher at Vermilion. The services of these men were available through the spring and early summer to give assistance in organizing, and to provide instruction to schools in new centres on the preparation of exhibits.

With the restoration of the Government services above mentioned, interest throughout the Province was immediately revived, many old fair associations were re-organized, and quite a number of applications were received for the establishment of fairs at new centres. As a result, during the past season there were 80 active Fair Associations in the Province, 52 of these being in the southern district, and 28 in the north. Fairs were held during the months of September and early October. It was necessary to divide the southern district into three judging circuits, and the northern into two, with a staff of judges from the Schools of Agriculture for each circuit. These groups of judges were assisted by the local School Inspectors, who judged the School Fair work, and by the District Agriculturists who were responsible for the live stock judging. Cancellation of fairs occurred at eight centres—five in the Olds and three in the Vermilion district—on account of the epidemic of infantile paralysis. The actual number of Fairs held was seventy-two. Exhibits on the whole were of a high standard, especially in the central and southern areas. In the north, crops were badly damaged by frost, and the Fairs suffered accordingly. It was noted that the numbers of exhibits in the stock classes were considerably reduced from those of fairs held a few years ago, probably because of the withdrawal of Government grants for the stock classes.

The usual Scholarship Short Course was held at each of the Schools of Agriculture in July. These Scholarships are given by the Department

of Agriculture, and consist of a one week's course, including travelling and living expenses, awarded to the boy and girl making the highest number of points at each School Fair in the previous year. The attendance at Olds was 102, and at Vermilion, 38. At the close of these courses, examinations are given, and the boy and girl making the highest standing are awarded a scholarship of \$75.00 by the Department. This Scholarship is applied on the expenses of a regular winter course at the Schools of Agriculture. These scholarships were awarded as follows:—

For the Olds District: Ellen Blair, Naco, and Leonard Haney, Iron Springs.

At Vermilion: Elizabeth Finley, Ryley, and Lester May, Alliance.

During the past year, the School Fair work was somewhat handicapped, because of the limited available quantity of School Fair handbooks which were last printed in 1930. This difficulty has been largely remedied by the publication at the close of the year of a new pamphlet containing a revised prize list. This pamphlet is now available to all schools for the 1936 season.

A further considerable increase in the number of School Fairs is anticipated for next season. During the last few weeks of the year, sixteen new centres have taken steps toward organizing, and further inquiries are being received.

REPORT ON FIELD DAYS AND SHORT COURSES

(S. H. GANDIER, *Acting Director*)

FIELD DAYS.

The system which was adopted in 1934 for the conduction of field days was continued through the past season. The various agencies interested are the several Branches of the Provincial Department of Agriculture, the Provincial Farms, Junior Grain and Stock Clubs, the Dominion Department of Agriculture through its Experiment Stations, Illustration Farms and field-men, the Provincial University, the Soldier Settlement Board, a number of the leading grain companies, Canada Malting Company, various Stock Breeders' Associations, and the Provincial and Canadian Seed Growers' Associations. These agencies co-operated with the office of the Assistant Deputy Minister of Agriculture, through which all field days arrangements were made.

Through the months of July and August, thirty-two field days for the information of the farming public were conducted at Provincial Government Farms, the University Farm, the Dominion Experiment Stations at Lacombe and Lethbridge, at Dominion Illustration Farms, and at a number of outstanding private farms through the Province. These special days were well attended. This type of extension work evidently appeals very strongly to the farmers, doubtlessly because of the practical way in which the information on stock and crops is presented in the farm-yard and the field.

In addition to the gatherings mentioned above, field days were also held in the interests of the Junior Grain and Stock Clubs. These meetings were attended by large numbers of the older people as well as by the Junior club members. The Grain Club days were held just before harvest, when the standing crops could be inspected. Field days for the Junior Stock Clubs were held at such times as the calves and swine were in finished condition. They took the form of local stock fairs, when the animals were judged, and prizes awarded. There were approximately one hundred and twenty of these Junior field days.

SHORT COURSES.

The usual programme of Winter Short Courses was held through the months of February and March. A total of forty-eight Short Courses were scheduled, and all districts of the Province took advantage of this service. Most of these courses were arranged at points recommended by the District Agriculturists where the community is particularly interested in certain special phases of agriculture. At many points the meetings were sponsored jointly by the Department of Agriculture and local organizations such as Boards of Trade and Service Clubs.

The large majority of these courses were for one day only. Two-day courses were held at Calgary, Lethbridge and Red Deer. The general plan of programme provided for practical talks followed by discussion in which the farmers themselves participated. Subjects of discussion included the following: breeding, feeding and management of live stock, especially beef

cattle, sheep and swine; culture of forage and grain crops; weed problems; animal diseases; soils and fertilizers; poultry raising; insect pests, etc.

There was a good attendance at all courses except in a few cases when winter storms and bad roads interfered. Keen interest in these winter meetings continues to be shown by the farmers from year to year, and during December a number of inquiries as to courses for 1936 had already been received.

In addition to the services of officers of this Department, we would gratefully acknowledge the co-operation of the University staff and officers of the Dominion Department of Agriculture, without whose assistance these courses could not have attained their present degree of success.

REPORT OF THE WOMEN'S BUREAU

For several years previous to the spring of 1935 the work of this Bureau was conducted under the direction of the Assistant Deputy Minister. Activities were largely confined to the summer months, short courses and meetings being held throughout the Province, and instruction being given by several of the teachers in Household Economics from the staffs of the Schools of Agriculture.

Following the appointment of Miss Isabelle Alexander as Director of the Bureau in May of this year, questionnaires were sent out to the various women's organizations with a view to determining the type of instruction most suitable to their needs. Total meetings held throughout the Province from June to October were 195, with an approximate attendance of 3,760. Demonstrations and discussions included a wide variety of Home Economics topics.

Plans were made by the Bureau for a new type of service which involved the use of voluntary local leaders, whose duties are to relay lessons received from the Bureau teacher, to the women in their own districts. Such a plan has been highly successful in some of the other provinces. It promotes the development of a greater degree of initiative and resourcefulness in rural women, and gives them a wider interest in their work. Lessons were commenced at four centres, and applications were received from five others. Following the closing of the Bureau, late in the year, the four centres already started decided to complete the work by their own efforts and with the aid of typed lessons.

Other new projects commenced during the year were:—

1. First Year Sewing Course for Girls.
2. Course in "Handicrafts as Related to the Girls' Bedroom".
3. Revision of the Canning Bulletin.
4. Regular Schedule of Radio Talks Relating to Home Economics.

The usual services of a District Worker amongst Ukrainian settlers were continued, with headquarters at Vegreville. Many meetings were held for instruction in canning and preserving, meat curing, tanning of furs and skins, re-modelling of clothing, glove making, cheese making, etc.

Many of the activities of the Women's Bureau were discontinued on December 15th of this year, when the services of the Director and District Worker were dispensed with.

Report of the District Agriculturists

SEDGEWICK DISTRICT

(H. W. SCOTT)

There was very little precipitation in the fall of 1934, and the surface and sub-surface soil was quite dry when winter set in. A heavy blanket of snow covered the ground, including land that was summer-fallowed, until well on in 1935. The spring run-off was less than usual, but the surplus moisture in the top-soil delayed seeding operations. Some were able to commence plowing on the high land about April 19th, and plowing was general by April 22nd. General seeding commenced about May 11th. Cool weather favoured the horses, and in most cases seeding, except for green feed, was completed by the end of May. There was ample moisture for germination, as 3.62 inches of rain fell at Sedgewick during May. East of Hughenden the rainfall was considerably less. Scattered showers kept the cereal crops and meadows growing rapidly, and a heavy rain, June 13th and 14th, carried the crop well into July, except in the eastern part of the district. The middle of July was a critical period for all crops, the heat and wind licked up the surface moisture rapidly, and there was little reserve, even in summer-fallow land. Scattered showers west of Hughenden kept the crops growing well, however, and the heat hastened maturity. Frequent hail-storms, varying in extent and intensity, visited a good part of the district during July and early August, and left quite a few farmers without any grain for threshing.

Poisoning of grasshoppers had to be resorted to in the Provost, Bodo and Cadogan districts, but the loss from grasshoppers was light, compared to the loss sustained from drouth.

Some wheat, oats, barley and flax were cut by August 12th. On the night of August 15th, frost visited the entire district, and all grain not cut was damaged to some extent, and much of the grain still standing never filled after that date.

Some wheat was cut at once, and the land summer-fallowed, but many did not realize the seriousness of the frost damage until harvesting commenced in a general way, seven to ten days later. Threshing was completed reasonably early, when it was found that the yields were far below expectations, and the grades low. There was about as much No. 6 wheat as there was of the combined higher grades with about an equal quantity grading Feed. The lack of volume of good market grain, and the need for cash, forced a heavy liquidation of cattle that would otherwise have been grain finished for market. Buyers for Ontario feeders purchased many of these cattle. At threshing time there was a strong demand for sows, but as farmers realized the low feeding value of most of the grain, the demand slackened.

Considerable effort has been directed towards working out with leading farmers a more balanced system of farming, suited to their local conditions. With a background of experience covering twenty years or more,

these men ask assistance in deciding the most suitable crop for certain fields, realizing that the particular field, rather than the whole farm, must be considered the unit in planning a crop rotation. With crops varying annually in quantity and quality as they do, due almost entirely to weather conditions, over which the farmer has no control, a proper balance between the number and kind of live stock kept, and the feed available on the farm at any particular time, is essential. It is important that the live stock maintained on the farm must be of such a nature that the numbers can be increased when there is plenty of feed, and always be maintained in such a condition that they may be sold on the market to advantage at times of feed shortage. The importance of a balanced system of farming suitable to the particular district and the particular farm, has been a subject for discussion at meetings, and with many individual farmers throughout the year.

The people residing in the municipalities in the eastern part of this district are realizing more each year that the crop load the soil will carry must determine to a large extent the density of the population. A good deal of this land is in the brown soil zone; the land is rolling, the rainfall limited, and much of this soil is of a sandy, drift nature. During the period of high prices for wheat, much of this land was brought under cultivation, and now the people are realizing that family ranches, with only the best soil devoted to growing cereal crops and tame grass, is the type of farming most suited to the district. For the past three winters it was necessary for many in the area to bring in additional feed to maintain the live stock they had; a good deal of this feed had to be purchased on loan through the Provincial Government. Quite a number of parcels of land have been forced back on the various municipalities, because the residents were not able or willing to pay the taxes. This situation caused a number of the councillors in these municipal districts to make a careful survey of the area, with the view of ascertaining the amount of land which, in their opinion, and in the opinion of the land-owners, should be seeded down to grass for a longer or shorter period. These municipalities have asked me to check over their estimates of local requirements of grass seed for the various pieces of land, and to do what I can to assist them to get seed through some Federal or Provincial Government policy. They have also asked that an Experimental Station be established in the district, under *The Federal Prairie Rehabilitation Act*.

Nine municipalities have asked for 20,000 pounds of crested wheat grass, 10,500 pounds of brome, 2,500 pounds of western rye grass, 100 pounds creeping red fescue, 5,000 pounds of sweet clover, and 200 pounds of alfalfa. A good deal of this land has been inspected in a general way, and the requests of the municipalities does not appear to be out of line with the needs of the district.

LIVE STOCK IMPROVEMENT.

Horses.—There is a decided increase in the number of foals throughout the district. The supply of stallions is limited, but to raise the necessary money to either purchase new stallions, or to club stallions under the Federal Government scheme, seem to be the chief handicap in getting more good sires. So far there have not been many grade stallions used. I have assisted the executives of a number of clubs in getting sufficient members so the clubs could operate. The Green Valley Club was able to secure the imported

stallion "Craigie Maxwell" that has had such a good breeding record since coming to Canada. With the relatively cheap price of horse feed, and the lack of ready cash for the purchase of tractor fuel, the horse continues to supply most of the power for farming, though in the area where feed was short, there was a relatively large amount of farm work done with tractors.

Cattle.—Steer feeding was quite profitable, and in the late spring and early summer quite a quantity of finished beef was marketed. The work carried on over a period of years with the boys and girls, is showing its effect in the quantity and quality of steers marketed. This was quite noticeable again this year at the Edmonton Spring Show, where exhibitors from this district won; first in pen of five steers over 1,000 pounds; first, second, third, fourth and sixth in the pen of five steers under 1,000 pounds; in the class for animals under 1,000 pounds, 22 out of 42 entries, with 10 out of the first 13 placings going to exhibitors in this district; and in the Baby Beef Class, 10 out of the first 17 prizes went to exhibitors from Daysland, east to Hardisty, with most of the special prizes in the Baby Beef Feeding Competition going to these exhibitors.

An experiment was undertaken with one of the ranchers, with the idea of him selling grain-fed rather than grass-fed steers. These steers were enclosed on good grass pasture, and liberally fed on grain during the fall and early winter. Heavy snow coming early in November, covering the grass, made it necessary for him to market his steers towards the end of November. Financial results proved satisfactory, and a further continuance of work along this line may be expected next year.

Through the Federal Bull Loaning Policy, there are five groups of Shorthorn bulls, one group of Jersey bulls, and one group of Red Polled bulls in the district. Under the Provincial Bull Purchase Policy, a number of good bulls were introduced, and the assistance thus given was appreciated. This office has been able to arrange for the exchange of something over thirty bulls between farmers during the year, and a number were assisted in selecting suitable bulls, the parties concerned having the necessary cash to make the purchase.

Swine.—For some time this fall there was quite a demand for sows, and we were able to locate a sufficient number. Assistance was also given in securing boars that would qualify for the Federal and Provincial bonus. Prices for market hogs have been fairly satisfactory throughout the year, and there has been a slight increase in the number of hogs on farms.

Poultry.—Poultry in this district is quite an important source of farm revenue. There are a few large flocks, but on most of the farms of members of the Accredited Flocks Association, the numbers will run from 200 to 500 birds, with a few flocks running up to 800 or 900 birds. Generally speaking, the members of these Associations have learned a good deal about raising chickens and keeping poultry in the last few years. The steady, substantial growth in this farm sideline is evidence of the profitability of poultry that is well bred, well housed and well cared for. The sale of hatching eggs to the large hatcheries form an important source of revenue, at a time of year when market eggs are usually low in price. New members are joining the older established associations, and a few new groups may be organized this winter. The cost of a satisfactory poultry house, in the Heisler and other districts, is being solved by the use of native sod for

the erection of the walls of the house. These sod houses have proven to be quite comfortable, and the birds in them have shown remarkably good production records, when the owner followed the instruction given by the representative of the Poultry Branch or the District Agriculturist. The use of gas lanterns, where electric light is not available, is a common practice on many of the farms throughout the district.

Instruction in the feeding and management of chicks and laying hens, and the selection and blood-testing of breeding flocks has taken a good deal of time throughout the year. So far this fall I have blood-tested practically 12,000 birds, and there are still 4,000 or more to be done in this area. Considerable assistance has been given to those who wish to candle and grade their eggs before offering them for sale, and some assistance has been given in locating markets for these graded eggs. We have a number of poultry raisers who have taken in \$3.00 or more per hen, from the sale of market and hatching eggs and market birds. This year, with so much grain damaged by frost, poultry-men have experienced a variety of troubles, but through the advice given, many of these difficulties have been overcome.

CROP IMPROVEMENT.

Fertilizers.—Each year there is an increase in the number of farmers who are using commercial fertilizers, and from the evidence gathered, it would appear that a relatively small amount of fertilizer will carry the crop over an attack from wireworms, cutworms and, to a certain extent, root-rot, and thus lessen the hazard in the early stage of the growth of the plant. In a cold, backward spring like 1935, the fertilizer appears to stimulate early growth, and shorten the time necessary for the plant to mature. This fact was quite noticeable, in that quite a few of the fields that had a light application of commercial fertilizer were cut before the frost of August 15th. It would seem, therefore, that the increase in yield of threshed grain may not be the only advantage that commercial fertilizer may have, under conditions as they exist in this district.

Cereal Crops.—Red Bobs 222 has always given a high yield and, over a period of years, has shown a better grade than Marquis on a number of farms. This has resulted in a decided increase in demand for seed of this variety. Marquis wheat has been the popular variety with those who have been paying most attention to the production of good seed, but it would appear that more local attention will have to be given to producing Red Bobs 222, if the demand for seed is to be met.

For some years we have spent considerable effort in an attempt to have a more general use made of good seed, and this year we were gratified when the report came back showing the results as to purity of the samples taken from the seed-drills throughout the district, and grown at the School of Agriculture at Olds. In selecting these samples, we tried to have them representative of the seed actually used, choosing samples from a few of the best seed growers; other samples from those who only a very short time ago paid little, if any, attention to the kind of seed used; and a number from those in between these two classes. The test showed that all samples except two were quite satisfactory for seed purposes because of their purity. Two samples of Reward wheat contained both Marquis and Garnet wheat, and in these cases it was recommended that new seed be obtained.

Forage Crops.—Through the Forage Crop Improvement Policy, applications were accepted by the Department, and seed supplied as follows:—

Western Rye Grass.....	1 farmer	10 acres
Brome	8 farmers	99 acres
Alfalfa	2 farmers	10 acres
Sweet Clover	8 farmers	108 acres
Crested Wheat Grass.....	19 farmers	55 acres
Creeping Red Fescue.....	3 farmers	8 acres

In all, forty-one farmers purchased through this policy sufficient seed for two hundred and ninety acres. Under this policy all the fields seeded are intended as a future source of seed. During the fall, all these fields were inspected. It was found, however, that in too many cases, farmers have not yet realized the seriousness of seeding grass and clover too deeply, or of spoiling an otherwise good catch by using a nurse crop. Previous experience in a more humid area appears to be hard to forget, and the seeding of grass and clover in this district is a new experience to many. From observations made this year in the district, crested wheat grass appears to make a heavy fibrous growth, and, when plowed, more fine fibre was observed in the soil than when the original prairie grass was first plowed. This fact has led those who have light, sandy and drifting soil, to desire to get this type of land down to crested wheat grass for a few years, to restore the fibre. The plowed fields that have had creeping red fescue growing on them for a few years also show an exceeding large amount of root fibre.

FIELD DAYS.

The Field Day has become an effective and popular way of spreading general agricultural information.

The first one of the season was held at Czar Lake, on June 22nd, at which there was an attendance of about 275 people. Dr. R. D. Sinclair, University of Alberta; Mr. L. B. Thompson, manager of the Range Station at Manyberries, and the writer were the speakers. Mr. Thompson outlined his results from seeding land to grass, naming the most successful varieties and mixtures for the Manyberries area, and he outlined the Reclamation Programme for the drouth area, as set out under the Federal Policy. Dr. Sinclair spoke on the utilization of feeds.

Some organization work was done in connection with the Shorthorn Field Day, at the farm of Mr. Claud Gallinger, Tofield, and seven cars from this district travelled to Tofield for this event.

On July 19th, I attended the Illustration Field Day on the farm of Mr. E. A. Pitman at Chauvin, and addressed a fairly large gathering.

A Poultry Field Day was organized for July 26th, on the farm of Mr. C. M. Mosier, Daysland, at which Mr. Cormie, Mr. Cunningham and myself filled in the programme. The Poultry Service of the Dominion Live Stock Branch, Edmonton, arranged a demonstration of wax plucking of poultry.

On July 31st, the fifth annual Field Day, under the auspices of the Sedgewick Agricultural Society, was held at the farm of Mr. Charles Ball of Sedgewick. Close to 1,000 people were in attendance. The record of the persons attending this Field Day has been kept for a number of years now, and it is gratifying to know that so many people come back year after year to get the information that is presented. A number, who the first year or two did not show much interest, now recognize the importance of this event, and are staunch supporters.

Another successful Field Day, under the auspices of the Provost Agricultural Society, and the Junior Grain Clubs in the eastern part of the Province, was held on the farm of Mr. Mahlon Watson, on August 5th. There were about 300 people in attendance. Mr. E. H. Buckingham, Mr. G. M. Cormie, Mr. I. C. Cunningham and myself were the speakers.

We organized about twenty meetings to give the people of the district the opportunity to hear Mr. E. W. Brunsden discuss *The Natural Products Marketing Act* in its various phases.

Meetings in connection with the campaign to destroy grasshoppers were held in the Provost and Cadogan districts, during the spring and early summer.

A trip to the Experimental Farm at Scott, Saskatchewan, was also organized, and about seventy people took advantage of this opportunity of studying the experiments carried on at this station, where the soil and climatic conditions are quite similar to those in the eastern part of my territory.

On September 28th, we addressed a meeting of the Ribstone Live Stock Association, which was held at Provost.

CLUB WORK.

During the year we directed the activities of Grain Clubs at the following points:—Hayter, Wheat Club, 15 members, Oats, 16, Barley, 12, Flax, 8; Provost, Wheat, 13; Loughheed, Wheat, 11, Oats, 11; Sedgewick, Oats, 18; Strome, Wheat, 15, Oats, 14; Alliance, Wheat, 17, Oats, 11; Viking, Wheat, 22, Oats, 12; Jarrow, Wheat, 12; Edgerton, Wheat, 7, Oats, 9.

In all there were 222 Grain Club members. At least two meetings were held with each club during the year, and practically all the club members attended one or more of the Agricultural Field Days, held at various places in the district. Club members were encouraged to attend the Boys' Camp at the Vermilion School of Agriculture, and, as a result of the time spent at the school, a number of these boys have entered the regular course at the School of Agriculture this winter. I was not able to judge the standing crop on more than 97 fields; the balance of the judging was done by Mr. Milne, from the staff of the Experimental Farm at Lacombe. Hail in some of the districts destroyed a number of these seed plots, and frost did considerable damage, with the result that many of the samples of the seed exhibited at the Junior Fairs this year, were of an inferior grade. Through Grain Clubs, the boys are getting valuable information in producing good seed, and in keeping it clean, and the high quality of seed supplied generally through clubs is having a marked effect on the purity of seed grain used in the district.

SCHOOL FAIRS.

School Fairs were held at Camrose, Lakefield, Wavy Lake, Sedgewick, Treaty Hill, Amisk and Cadogan. The general interest in School Fairs appears to be maintained, and the number of exhibits, and the interest shown by the exhibitors and the people in the district point to the popularity of this kind of educational work.

The transportation of the School Fair winners from the district to and from the Short Course at the School of Agriculture at Vermilion, came under my supervision again this year.

I attended the Wainwright and Goose Creek Agricultural Fairs. The latter Fair, particularly, has the whole-hearted support of the residents in the district which it serves.

RELIEF.

From the first of the year, up to the end of May, considerable time was spent in connection with the organization for the distribution of feed and seed in the eastern part of my district. Hail and drouth left a large part of the population without seed or the necessary feed to maintain their work horses and a few head of other live stock. The applications of 695 farmers were accepted for Relief feed, which was shipped into the district on Free Freight. The average loan to each farmer amounted to \$66.00, while in addition to this, over \$3,000.00 worth of feed went out on cash sales. Two hundred and eighty farmers, required to purchase seed on loan, the average loan for seed purposes amounting to \$68.08.

The correspondence up to the end of May was particularly heavy. A total of 3,194 letters were received, and a total of 3,310 letters went out from this office.

In addition to the work in connection with the distribution of feed and seed, some time was sent in locating farms where cattle from the drier areas could be shipped for winter feeding. A considerable number of requests were received for seed grain outside the drouth area, and I think in every case a suitable supply of seed was obtained. Assistance was given to some who found difficulty in getting binder twine.

Wool was assembled at Sedgewick, Czar and Provost, and a carload shipped to the Canadian Co-operative Wool Growers Association at Weston, for the Alberta Provincial Sheep Breeders Association.

During the early summer the area under my supervision was enlarged, and an attempt was made to make as many contacts as possible in the added area, but organized work was not undertaken to any extent.

WETASKIWIN DISTRICT

(G. S. BLACK)

The District Agriculturist's office was opened in Wetaskiwin late in the month of May, and was closed early in December. The spring season in this section was exceptionally late. Excessive moisture prevented the majority of farmers from sowing wheat until very late. The result was that wheat was sown well past the usual time, and the bulk of coarse grains were sown very late as compared to previous years. Quite an increase was noted in the amount of summer-fallow. Continued wet weather through the whole season produced a very rank growth which was ideal for hay and pasture crops, but in turn retarded ripening of the cereals. The largest crop in many years of hay and green feed was taken off. The quality, however, was only fair, due to the near impossibility of proper drying. A severe killing frost occurred on the night of August 15th. This very materially affected both the quality and the grade of the grains. The bulk of the grain crop graded very low. Germination was later shown to be severely affected. Continued wet weather into the fall season also made threshing very late, and much grain was threshed containing an excessive

amount of moisture. Very little grain was left in the fields before freeze-up. A series of hail-storms took a large toll over this district. In some sections 100 per cent. damage occurred. However, over the whole of the district, there should be sufficient seed to meet the requirements of the coming year. Typical of frost occurrences, many fields were not seriously affected.

HORSES.

There is a marked shortage of young horses growing up in this district. Very few stallions were travelled during the period of low prices, and the average farmer is now finding his horses are old, and he has to go elsewhere for replacements. A number of carlots have been brought in. The field is ripe for the introduction of a number of stallion clubs, and tentative plans were laid for organizing such clubs. A keen response will greet the holding of meetings during the winter months.

CATTLE.

Large numbers of cattle are raised in this district. The quality on the average leaves much to be desired. A mixture of both beef and dairy breeds inter-crossed has been responsible for a large amount of very inferior stock being raised. The Shorthorn breed predominates, and a number of pure-bred herds are in this area. Their progeny are, however, being usually sold outside of the district. Much good could be accomplished by the loaning of pure-bred sires in the newer areas, as this area has received but little help in this connection. A large number of feeder cattle are being wintered this year due to the abundance of feed available. Two carlots of range feeder cattle were brought in from the south, which may be a start in this direction, and is being carefully watched.

SHEEP.

Sections of this district are increasing their sheep holdings, rough unbroken land being mainly responsible. No pure-bred flocks are being raised, with two exceptions. I was able to place a number of very good sires in this district. Small flocks are on many farms, and the quality of the animals raised could be materially improved with very little supervision. The nearness of the Edmonton market is a distinct advantage in marketing well finished lambs. The tendency has been to use more compact breeds, such as the Hampshire and the Suffolk. The Oxfords proving to be too slow in maturing to get within the weights, is the experience of many farmers in this section.

SWINE.

The Leduc, Wetaskiwin and Ponoka districts are all very large swine-producing sections of Alberta. The quality of hog marketed is above the average of the Province. Swine production has ceased to be a sideline, and has become a major business. The majority of farmers are raising two litters per year, and in some cases are not producing sufficient grain on their own farms to raise these hogs. In general, good feeding methods are being used; mineral and protein supplements are fed, and fairly good, balanced rations available. However, disease is taking a very large toll. In some sections over 60 per cent. of the farms are having grave losses which, in addition to the high death rate, are also causing a large numbers of pigs to be marketed at too old an age, thereby resulting in an inferior

product being sold. It is regrettable to note that from 20 to 50 per cent. of the profit is being lost through disease. A large proportion of my time was devoted to swine sanitation work this summer. The Yorkshire breed of hogs predominates, with a small sprinkling of Tamworths. A number of men are cross-breeding these two breeds to advantage. The quality of the hogs could be improved with more rigid culling of the female breeding stock. Swine clubs have been of major importance in the northern part of this district, in supplying both male and female breeding stock.

As swine raising is of such importance in this area, much time was devoted to individual producers as well as to carrying on the club programme. It was pleasing to note that a former Swine Club member was able to carry off honours in the open class at the Edmonton Fall Show. The Liberty Swine Club has made a distinct contribution to swine improvement work in a large area west of Leduc. A high percentage of select hogs have been marketed over the whole of this district, and the butcher hog is fast being eliminated. Needless to say, the people of this district are enthusiastic hog raisers and are very alert to improve swine feeding and breeding methods.

POULTRY.

Poultry raising in this area is very spotted. Although a large amount of poultry is being raised, there is much room for improvement. Only a very few people in this district are giving the farm flock the care and consideration necessary to make it profitable. Much could be accomplished in the way of equipment and better feeding. Marketing also leaves much to be desired, prevailing prices of a few seasons back are still being remembered and have the effect of poultry being sadly neglected in most cases. Some considerable time was spent in culling and blood-testing flocks this section last fall. There are no accredited flocks, and much improvement could be made in this work.

SOILS.

The western section of this whole district is in the gray soil belt, and has only recently been brought under cultivation. The settler here is facing a distinctly new problem, and is lacking in the knowledge of the place for legumes and fertilizers. Much work must be done in this connection, as whole sections are having difficulty, and are farming similar to those on black soil farms. New varieties of grains are slowly spreading over this area, and should receive more publicity. As this section of country has only recently been brought under cultivation, this serious soil problem must be faced, and a district man could be of real value in this community. Much credit is due the Soils Branch of the University for their experimental work at Breton, but territory some distance from this point requires very much assistance in this connection.

CEREAL CROPS.

The quality of cereal crops could be improved by the use of pure variety grains. The seed-drill survey shows much grain being sown that is badly mixed. The new grading regulations may cause a demand for registered seed in this connection. Wheat is possibly more of a mixture than other grains, due to the large number of varieties in use. Much interest was shown in Newall barley, as large amounts of this crop is being sown, and strong-strawed varieties are in demand. The quality of oats

raised is much superior to either wheat or barley. Peatland barley is in demand, and much of this crop would have been sown if frost damage had not limited the seed supply.

FORAGE CROPS.

The acreage being sown to forage crops is increasing rapidly. Alfalfa has become a crop of major importance. Sweet clover has been replaced by this crop, which is doing very well in this district. A large amount of both western rye and brome grass is being sown annually. Through the policy of the Dominion Seed Branch, in supplying forage seeds at reduced rates, much acreage is now being used. Natural pastures have become a thing of the past, and substitutes are being used. A large number of inquiries are being received in connection with the sowing rates and methods of cultivation. Only a limited number are producing seed, but this will increase as the need develops.

WEEDS.

No fair or accurate report could be given of the weed situation on one year's residence in this district. Reports from Weed Inspectors show the coming in of new weeds, and, due to the rainy season, wild oats were more apparent than in the past year. Assistance was given to Weed Inspectors in connection with new specimens. Conditions were ideal this year for a successful battle against wild oats. Forage crops are playing an important part in weed control. Several of the better farms are singularly free from noxious weeds common to most farms. In a large measure this is due to crop rotation methods being followed.

SHORT COURSES.

The past summer, due to both Provincial and Dominion Elections being held, was not ideal for the holding of Short course meetings. Attendance, it was felt, would be very materially affected. Road conditions also were, in the main, bad. However, plans were laid for the holding of a number of Short Courses during the winter months, all of which had to be abandoned. A Short Course was held this fall at Ponoka and, despite bad weather conditions, a fair turn-out was experienced. Lectures were given in live stock and poultry, with outside speakers being present. A large number of farmers were encouraged to attend both the Feeders' and Breeders' days held at the University and at Lacombe Experimental Farm.

CLUB WORK.

Due to the lateness of the season, no new clubs were organized. Work was, however, carried on with clubs previously organized. Good results were shown in most cases. The required number of meetings were held, and fairs held later in the season. A Calf Feeding Club was started at Wetaskiwn, with over 20 members joining. However, this had to be closed upon my removal. New clubs were to be organized at a number of points, but this has also to pass for the time being. Much good can still be accomplished in the newer areas by the use of both Grain and Live Stock Clubs. The free loaning of good sires has made a real contribution in many sections of the Province. A team of Juniors, Noel Heslup and William Haines, were the winners of the Provincial Dairy Championship. Westmount Club at Millet was their sponsoring club. It is apparent in this district that the clubs organized at some distance from

railway lines or large towns take a far more active interest in Junior work, also that clubs have a definite period of usefulness when they should be either disbanded or new projects undertaken.

A portion of my time was also devoted to supervising the Boys' Camp held at Edmonton last summer. At this camp forty young men spent a very profitable four days. A number of School Fairs were also held, at which I judged. Assistance was also given in securing students for the Schools of Agriculture. Much time was taken in making contacts for future work.

RED DEER DISTRICT

(F. H. NEWCOMBE)

(N.B.—It will be noted that occasional reference is made in the following report to the Vegreville District, since the District Agriculturist served in that district during the earlier months of the year.)

The season was an unusual one. Winter weather prevailed well on to the first of May, and seeding operations were not general until about May 10th, which ordinarily was considered as the last date on which wheat could be safely seeded. Ninety per cent. of the wheat was seeded after that date, and, owing to shortage of time, much of the crop was put in on poorly prepared land. The weather continued cool and very wet throughout the summer, and growth of the cereals was slow. Precipitation records for the Red Deer district follow:—

May	6.36 inches
June	4.18 inches
July	5.70 inches
August	3.59 inches
September	2.74 inches
Total.....	22.57 inches

Frost, which was general over the northern part of the Province in August, did little if any damage in the Red Deer district. Severe frosts occurred, however, in September, and the grain was seriously injured. Yields were approximately: wheat, 24 bushels; oats, 35 bushels, and barley, 26 bushels per acre. Wheat graded almost entirely 4, 5, 6 and Feed. Much of the grain is unsuitable for feed, and contains little nutriment. This is particularly noticeable in the cattle and swine feed lots, and in the egg production and poultry. Forage crops gave wonderful yields. alfalfa in two cuttings making three to three and one-half tons, and some timothy and alsike going close to four tons at one cut. An abundance of good quality fodder prevails throughout the Red Deer district.

STATISTICS.

Car Mileage	17,465
Farm Visits	696
Office Calls	384
Letters Sent Out.....	620
Circulars and Bulletins.....	485

HORSES.

Horse breeding would appear to be distinctly on the increase. In the Vegreville district, assistance was given in the organization of Percheron Stallion Clubs at Vegreville and Kingman. The former clubbed the stallion Romeo owned by Walter Bissell of Viking, and the latter a stallion

owned by Ennis of Innisfail. The Vegreville Clydesdale Club was discontinued on account of unsatisfactory stallion service and inability of securing sufficient mares to carry on.

In the Red Deer district there is good interest in horse breeding, and good horses are in evidence. Several good stallions are available to the farmers there.

CATTLE.

The Lacombe district is, of course, noted for its high quality breeding cattle, especially Shorthorns. Through most of the territory served by this office the quality of breeding cattle is good. Around Red Deer, dairy blood is predominant. In the western section the quality is low, and some work should be done. Our activities in this department have been confined mostly to assistance in procuring sires.

Commercial feeding is an important feature throughout this territory, and several thousand are in feed lots this winter. The quality of the feed is not good, as mentioned above, but supplements are in general use, and the cattle are reported to be making good gains.

Dairying is a general practice throughout the Red Deer district. Apart from a few very good herds, the quality is only fair, and there is room for work toward improvement.

SHEEP.

Sheep raising appears to be quite popular here, and small flocks are kept on many farms. We have not attempted anything in this line except to tender advice on problems as requested. Some five or six carloads of wool were shipped out of this district by the Canadian Co-operative Wool Growers.

SWINE.

Swine constitute a very important part of the farm revenue in both Red Deer and Vegreville districts. In the former, which includes the Blindman Valley district, the quality of pigs is quite good. In general, we would say that the type may incline to extreme length with some lack of balance and certainly a tendency toward lack of finish at least this year. Shortage of feed may account for this, to some extent, but we are of the opinion that the type generally could stand to be thickened up. Probably when this office is better known to the farmers, more use will be made of it to procure breeding stock. The proximity of the Experimental Station at Lacombe is an important factor in this regard. Only two Dominion Government loaned boars are in this district, they having been loaned to Rimbey Junior Swine Club.

POULTRY.

Accredited Flocks Associations are active at Red Deer, Innisfail and Lacombe, and poultry interest runs high in this territory. Field Days were held by these groups and several fall meetings have been attended also. The blood-testing service has been carried on this fall, and we have tested some 8,000 to 9,000 birds in addition to those done by the staff of the Poultry Branch. Some very high quality poultry is being kept, though there is still room for much improvement in the average farm flocks, particularly in feeding and management. Turkeys also are raised in quite large numbers, and of splendid quality.

SOILS.

The soils in the Red Deer territory constitute a definite problem. In some portions the soil is sandy, and drifting has and will be the problem; while west of the Canadian Pacific Railway there are large areas of grey soils. On much of the latter type there are farmers who have moved in from the dried-out parts of the Province. Here they are finding a very different set of conditions to those they left, and, without some guidance, it is evident they will not be able to make a success. We have done individual work in this matter, and we also held a meeting at Leslieville which was addressed by Dr. Newton of the University. More of these meetings will be attempted.

CEREALS.

About half or less of the territory served by this office is really suitable for production of wheat of good quality. The balance should, we think, be devoted principally to the coarse grains. Yields this year were fair but quality was poor owing to frost. There is great admixture of varieties in many of the grain fields, and in future some work should be done along this line. For this year the problem will be to procure seed which will germinate, though there will probably be about sufficient for the district without bringing it in from outside.

FORAGE CROPS.

This district appears to be exceptionally suited to the production of forage. Alfalfa, clovers and the tame hays do very well. Timothy is popular in the west section, and one or two carloads of this seed will probably be shipped out this year. Yields of hay up to four tons were reported. There was a generous patronage of the Forage Crops Seed Distribution Policy, and we made about seventy-five inspections under this policy. In many cases the seed was sown on poorly prepared land, and it would appear that close supervision is indicated to make this policy a success.

WEEDS.

The past season witnessed a phenomenal weed growth. Abundant moisture germinated large numbers of seeds, and also made difficult the eradication of the perennials. Canada thistle, couch grass and all the annuals are present in this district, and constitute a very definite menace. Our connection with the problem has been in advisory capacity only.

FIELD DAYS AND FARM MEETINGS.

During June, July and part of August it would have been possible to attend a Field Day on almost every day. Time would not permit of this, though we attended some of them. The days held at the Lacombe Farm were well patronized, and we were able to make some contacts there. In all, during the year, we have addressed about forty meetings with an average attendance of about thirty-five.

JUNIOR CLUBS.

Before leaving the Vegreville district, we re-organized 12 Grain Clubs at 7 points, with a total membership of 180. We found three Grain Clubs in operation in the Red Deer district, and have carried them through the season holding the usual Field Days, meetings and Seed Fairs.

Swine Clubs were conducted at Rimbey and Lacombe with 48 members. The Lacombe Beef Club held its Fair on June 8th, soon after I arrived here, and my connection with it was limited to training the boys in judging. Dairy Calf Clubs were organized at Red Deer and Bentley. At the former, 30 animals were exhibited, and at Bentley 19 were brought out. The quality of the dairy calves was exceptionally high, and the fitting and care left little to be desired.

Training in judging was given to all of these clubs. Teams in beef, dairy and swine competed in the final competitions at Edmonton, the beef team, composed of Thomas Biglands and Edwin Pethybridge, of Lacombe, winning the Provincial and later the Dominion Championship.

Beef Feeding Clubs are again under way at Lacombe and Red Deer with about 20 members in each. Calves are now on feed, and a good season is indicated.

A Farm Camp was conducted at the Red Deer Exhibition, with 51 boys enrolled. The camp was quite successful and met with the approval of the Fair Board and the public generally. Instruction was given by Messrs. Wilson, Murray and Sinclair.

In addition to the organized work conducted by this office, there have been many requests for individual assistance, which we have attended to. We also judged at 7 Fairs and School Fairs in the district.

The work in the Red Deer district was begun on May 25th, and we are pleased to report a fine reception from the people of the district.

WILLINGDON DISTRICT

(WM. N. PIDRUCHNEY)

Following one of the most backward seasons in the history of this district, seeding did not become general until the middle of May. Continued cold, with frequent falls of heavy, wet snow, and rain, interspersed with periods of high winds, characterized April and the first half of May weather. Intermittent showers of rain even during the spring work interfered with seeding operations, and much of the land was sown without the usual careful preparation. The weather conditions, such as they were, had quite an influence upon the total acreage sown to grains. Considerable more land was left for summer-fallow than planned for, which was probably in the best interest of the district, as more land than expected received the treatment for the eradication of weeds. Wheat acreage took a considerable reduction, but the coarse grain acreage was somewhat increased, especially of barley.

Moisture conditions were the most satisfactory for some years, and while spring operations were delayed, optimism for a good crop ran high. The cold, wet weather, however, which continued throughout the growing season, retarded the normal growth. In the districts west of Waskateneau, many fields were practically inundated for a considerable length of time, because of frequent rains, and heavy losses occurred. The slow development of the crops, therefore, made it possible for the frost, which occurred on the night of August 15th, to do a greater damage than it would have done if the crops had been progressing normally. The damage was heavy

to all crops, creating a heavy reduction in both yield and grade. The problem of seed supply, therefore, is very serious, and a great quantity of seed will have to be shipped in.

Harvesting operations got under way towards the end of August, and were completed without much interference, but when threshing commenced, a series of wet spells came on again, and when winter settled in for good, there was still another 4 or 5 days' threshing to do, which was left over until spring. The first snow fell on the 7th of October. Practically in all cases, threshing charges were on an hourly basis, which made it very expensive, and in many cases the revenue from the sale of the grain was all used up to pay the thresh bill.

Live stock generally came out of the winter in fair condition. Pastures came on rapidly, providing the needed grass for stock. Losses in spring litters were heavier than usual, and it is a matter which will have to receive some thorough investigation in the immediate future. The pigs are borne healthy and thrifty, and seem to be doing well, and then suddenly die off at 2 or 3 weeks of age, and often at an older age.

The feed situation is far from being satisfactory. There is plenty of long feed, but the grain is of a very poor quality. Most farmers are experiencing difficulties in finishing off their pigs, and consequently, smaller returns will be realized from the sale of them during the next several months.

LIVE STOCK IMPROVEMENT.

Horses.—There is still considerable interest in horse-breeding in my territory. In addition to the number of stallions placed during the last few years under the various policies, three new clubs were assisted with the organization of them, and stallions located. These are located at Mundare, Ispas and Bellis. Meetings were also held in response to the requests at Two Hills, Wahstao and Smoky Lake, but these districts were not successful in getting completely organized this year. The old clubs are operating very successfully, and wonderful satisfaction is expressed for the manner in which the question of stallions has been handled the last three years.

Cattle.—The main activity of this office, in the promotion of the cattle industry during the past several years, has been along the line of good pure-bred bulls, and gradually eliminate the scrubs. Considerable progress has been attained in this respect, but the policy of good bulls is followed up with a greater intensity than ever. Good breeding females are brought in from time to time also. Eight pure-bred Shorthorn cows have been purchased for four parties, and assistance rendered in the purchase of 17 pure-bred bulls during the year. Now, since a better quality of calves is being raised from the good bulls, more winter feeding is being carried on. More information on the feeding of cattle has been in demand last fall than ever before.

Swine.—In addition to the Swine Club work carried on in five districts, a great deal of other assistance is rendered in the promotion of this class of stock. Twenty-two boars were located for the farmers during the summer months, and about as many breeding females. The question of proper feeding and management receives much attention from this office, as much interest is manifest in this phase of hog production. There has been a very marked increase in the quality of the hogs marketed during

the last year throughout this north country, and one of the main reasons for it is that tremendous improvement in the feeding and management of the hogs has taken place. The revenue from the sale of the hogs throughout my territory has been very large, and if it was not for that revenue, there would be very little cash, indeed, in the country right now. Any tendency for the reduction of hogs is being steadily combatted. In the Whitford constituency alone the marketing of hogs in 1927 of 5,762 has been increased to 33,540 in 1934.

Sheep.—This district does not lend itself to extensive sheep raising. Several small flocks are in existence, and assistance is rendered from time to time in the purchase of rams, docking and dipping. The surplus of the wool crop is being absorbed locally, and shipped to the factories in Winnipeg to be made into blankets, sweaters, etc., for the family.

Poultry.—Poultry raising in my district does not enjoy the popularity that it does in other districts of the Province, although considerable poultry is kept on every farm. If the time was available, there is much room for promotion work to be done in this enterprise. Turkey raising, however, is more popular, and a large quantity of birds moves on to the market in the fall. Quite an improvement is being noted in the quality of the birds offered for sale. Several individuals of good breeding stock are being brought into the district each year, and 21 farmers were assisted in this respect during the year.

CEREAL CROPS.

The appreciation of registered seed is being noted steadily. One hundred and seventy-five bushels of first generation and 210 bushels of second generation Victory oats were shipped in through this office, for 37 farmers. Many others were advised where to get the seed, and it was shipped in direct by the farmers themselves. Considerable amounts of Red Bobs 222 and Marquis wheat seed was also located for a number of farmers. The above two varieties of wheat are the most popular south of the river, and the north side still adheres mostly to Garnet, because of the type of the soil, and fear of early frosts. Grain Clubs, of course, are the most important factor in the improvement of the grains in this part of the country, and much assistance is given in that connection.

WEEDS.

The weed menace, although still a very serious problem, is gradually receiving a set-back, because of the vigorous campaign that is carried on constantly from this office. Crop rotations and forage crops are being gradually introduced into the cropping system as a check to weed situation. The management of summer-fallow has improved immensely also.

FORAGE AND PASTURE CROPS.

Eighteen orders under the Federal Forage Policy and 29 orders for various forage crop seed from other sources went through this office during the year. There are many others who obtained their seed, and seeded down some grass crops, of which there is no record in the office, but who had their problems discussed with me. Assistance was rendered with the inspection of 41 fields under the Federal scheme. I have endeavoured to persuade the farmers continually to sow more forage crops, and the results of this campaign are most gratifying.

BOYS' AND GIRLS' CLUB WORK.

The following is the list of the Junior Clubs supervised from this office during the year:—

Swine Clubs, 4, membership, 78; Wheat Clubs, 3, membership, 44; Oat Clubs, 5, membership, 74; Barley Clubs, 7, membership, 118.

The above clubs were located at the following points of my territory:—Willingdon, Andrew, Kahwin, Ispas, Vilna, Bellis, Waskatneau, Radway, Wasel, Wahstao and Egremont.

Junior Clubs continue to be one of the principal activities of this office. While it may be a debatable question of how much time should be devoted to this work, there is no doubt that the education obtained by these young people through the club activities is one of the finest, and of a very lasting nature.

A great deal of the time in the club work was devoted to the meetings, club Field Days, judging of the plots, conducting judging competitions, training of judging teams, personal visits, etc., but no record of these was kept. Requests have come in early in the spring to assist with the organization of the Swine Clubs at Redwater, Opal and Smoky Lake, and, while a meeting was held at each place, and some other preliminary work was done, the poor condition of the roads at that time prevented complete organization. Three more Grain Clubs were organized also, but had to be abandoned for the year on account of lack of seed.

Junior Clubs have made a name for themselves in my territory on several occasions, and this advertisement is making them popular in all localities. The club work, however, has reached such proportions now that further expansion is almost impossible without seriously impairing other services connected with this office.

SHORT COURSES AND MEETINGS.

A one-day Agricultural Short Course was held at the following centres during the month of March:—St. Michael, Radway, Egremont, War-spite and Bellis. They were all very well attended, and are very effective in spreading agricultural information. Twenty-eight other meetings were held during the year, at which the various phases of farming were discussed.

MISCELLANEOUS.

The Farm Boys' Camp in connection with the Vegreville Exhibition was given assistance during the three days of the fair, at which the judging class were conducted. There were some 60 boys enrolled.

The Crop Testing Field Days at Mundare, Bellis and Willingdon were attended, and assistance was rendered with the programme of the day.

Some time was devoted in securing the students for the School of Agriculture at Vermilion. Although the results were not as satisfactory as could be expected, several students have enrolled from this territory, and are taking the course now. If it was not for the early frost, the enrolment from this district would have been the greatest in its history.

While no detailed record of the correspondence is kept throughout the year, there were at least 700 letters replied to, and several hundreds of circular letters mailed out to the club members.

A large supply of Dominion and Provincial agricultural publications is kept on hand, and several hundred of these were distributed in following up a certain project.

Bee-keeping, on a small scale, has been started by quite a number of farmers, and there is a considerable demand for services along this line in the spring, when the package bees begin to arrive.

In conclusion, I may say that the year 1935 will remain in the memory of the people in my territory for a long while. There was only about a week of real warm growing weather. There were many plans that could not be carried out, because of the short and cool summer. The revenue from the sale of grains barely met the expenses of harvesting, and from a financial standpoint the farmers are worse off than during any of the past five years of depression.

It has been a difficult year in respect to the work of this office. The roads were muddy and rough during the major part of the summer, and at times impassable for cars. Much of the field work had to be carried on under the most difficult conditions, and a good deal of the work did not receive the attention that it should have had, while some of the projects had to be abandoned altogether.

WESTLOCK DISTRICT

(E. G. Wood)

During the past year, this office has operated in three different districts, necessitating the establishing of two new headquarters. This situation was brought about through a fairly general re-organization, resulting in an increase in District Agriculturists, the re-arranging of districts and the inclusion of new territory within the Province which had not been previously served.

Having been stationed at Hanna for a period of five years, I was instructed to take over a territory located north-west of Edmonton, with Sangudo as headquarters. This transfer took place the middle of May. Apart from the fact that the districts were separated by a distance of approximately three hundred miles, farming conditions were also found to be widely different, while new and varied problems were confronted. Some of the differences most in evidence was the size and type of farming, vegetation, soil and soil moisture. Roads were also found to be much inferior, and during periods of excessive rainfall travelling by car was next to impossible.

Work was carried on from Sangudo during the summer months, and was confined largely to making the necessary contacts, the lining up of various projects suitable to the district and, in general, becoming more familiar with the problems common to the area assigned. The second transfer took place the first of October, with Westlock as headquarters, and a district extending as far north as Athabasca.

AGRICULTURAL RELIEF.

Owing to an almost complete crop failure in 1934, it was found necessary to ship large quantities of feed into the Hanna district in order to

carry the necessary live stock through the winter, and for the feeding of work horses during the spring rush of seeding operations. The greater portion of this feed was distributed under the Feed Relief Policy, as the majority of farmers were unable to finance their own purchase. The Hanna office was in complete charge of this work, and the area served included twenty-three points on the railway from which feed was distributed. At the time when this relief work was taken over by Mr. E. W. Phillips, upwards of two thousand applications were on file.

REGISTERED SEED DISTRIBUTION.

Orders for registered wheat and oats amounting to some fifteen hundred bushels were taken care of through the Hanna office. This seed was secured and cash collections made. A quantity of crested wheat grass seed was obtained and sold in fairly small lots to farmers wishing to determine its adaptability and value as pasture and hay.

JUNIOR CLUB WORK.

Two Grain and one Potato Club came under the supervision of the Sangudo office, and the total membership in the three clubs being thirty-nine. Field Days were held at two points, and were well attended by club members as well as farmers in the district. Instruction was given in variety identification, diseases and other phases of the grain and potato work. All plots were inspected, scored and reports submitted to the Field Crops Branch. A judging team consisting of two boys, representing the Athabasca Swine Club, was given training in swine judging previous to entering the Provincial contest held at Edmonton on November 5th and 6th. Although this particular team did not qualify for the Toronto Royal, they made a very creditable showing, and received information and training which will be of considerable value to them in the future.

FORAGE CROPS.

The Sangudo district, being noted for its timothy and clover-seed growing, a considerable amount of assistance was given in advising farmers the crops which should be retained for seed purposes, and the necessary measures to be taken in order to assure seed of a high grade. Several plots grown from seed secured through the Dominion Forage Seed Distribution Policy were inspected, and advice given regarding the proper handling of the crop.

POULTRY.

Due to Dominion Regulations governing the sale of hatching eggs, a large amount of blood-test work was conducted through this office. During the early part of the season, one week was spent with Mr. I. C. Cunningham of the Poultry Branch in obtaining first-hand knowledge of the work, and to become sufficiently familiar with the technique in the taking of blood samples, and the standards used in the culling of breeding flocks. Twenty-two flocks have been inspected, and blood samples taken from four thousand birds.

The past crop season in the districts north and north-west of Edmonton has been a disastrous one, and the nearest to a complete crop failure in the history of this section of the Province. Late seeding in the spring, due to an excessive amount of moisture, shortened up the growing season, and the climax came on August 15th when a severe frost was experienced.

This frost did not only lower the grades on threshed grains, but yields were lowered in many cases to a point which did not warrant the expense of harvesting the crop. A sufficient amount of long feed was secured to carry stock over the winter, but threshed grain was limited, and many farmers were forced to purchase hog feed or dispose of their hogs in an unfinished condition. This feed shortage will in some considerable measure influence the number of breeding sows retained on the farm, and it is reasonable to expect that a reduction in the pig population will be the result.

A problem of greater magnitude is confronting the farmers in this district, and that is the securing of suitable seed grain for the coming spring. This applies largely to seed oats and barley, and to some extent wheat. There is every indication that a considerable quantity of seed oats and barley will have to be shipped into the district to meet the demand. Even in cases where farmers were able to salvage a fair looking sample of oats from the 1935 crop, it is found through germination tests to be quite unsuitable for seed purposes.

FRENCH SPEAKING DISTRICTS

(J. H. TREMBLAY)

The spring of 1935 was approximately three weeks later than the one of the previous year, the first seedings being made on May 9th in the Edmonton district. The cold weather and rain were responsible for a slow start, but after June 15th more favourable weather prevailed, and progress was very satisfactory throughout the season. Unfortunately, a first general frost on August 15th caused considerable damage. The barley was a total loss; the wheat turned out as feed in most cases, and there will be a shortage of seed oats.

In the Falher district, the first frost occurred on August 25th, but it was not very serious. Although the yield per acre was not high (20 bushels in wheat, and 45 bushels in oats), the quality is much better, and the local supply for seed should be sufficient.

STATISTICS.

Fifteen public meetings were held during the year, with a total attendance of fourteen hundred and sixty-five people. This is in addition to several Junior Club meetings.

The mileage covered by automobile was 12,525 miles, while visiting three hundred farms.

Letters received, 479; letters sent out, 1,010.

Bulletins sent out, 127.

LIVE STOCK IMPROVEMENT.

Due to a reduction in the purchasing power, there has been less activity in the purchase of pure-bred live stock as a whole. On the other hand, there has been a greater interest in the selection of existing herds.

Horses.—The farmers are much more interested in the breeding of their mares in view of replacing the older stock and also increasing the number of their horses. Unfortunately, there are far too many grade

stallions standing for service, which discourages a number of owners of good horses, who feel there is undue competition. Our suggestion toward improving this condition would be the enforcement of the Act.

Two horse breeding centres have been formed during the year; one at Falher and one at Donnelly. Each group has purchased a pure-bred Percheron stallion. It is hoped that the organization of such centres will create a greater desire amongst the farmers to use a better class of stallions.

Cattle.—There is a very definite trend to increase the cattle population in these districts. The attention paid to the improving of quality through selection of females, and use of pure-bred sires, fully warrants the efforts we have made in this direction during the last five years.

In spite of the low prices for farm products which prevailed for the fourth year at least, we have been able to introduce twelve more pure-bred bulls and eight registered females.

Swine.—A considerable increase has occurred in the hog population, and a noticeable improvement in the general quality of hogs has been attained in the last few years. This can be ascertained by looking over the market report which states that for the Grouard district, in 1930, 3,101 hogs were marketed. In 1934 (1935 figures not being available yet), 8,198 head were marketed. The grading was as follows:—

	1930	1934
Selects	8.9%	12.1%
Bacon	17.8%	30.7%
Butchers	44.6%	38.0%
Heavys	4.9%	4.4%
Others	23.8%	14.8%

This results in the consumption of a much greater amount of coarse grains, locally, and higher returns.

In addition to a large number of Yorkshire boars and gilts distributed by local breeders, seven boars were brought in from the outside, and also sixteen gilts.

Poultry.—An increasing number of farmers are becoming more interested in improving their flocks. This year we have purchased for distribution in our districts; 850 baby chicks and 16 cockerels of the best strains of bred-to-lay birds. Several established flocks have also been culled to eliminate the poorer birds.

CEREALS.

Generally speaking, we are trying to encourage the production of earlier varieties of grains. The early frosts caused considerable damage over a period of years, and the risks could be greatly reduced by the growing of earlier varieties.

Peatland Barley.—As our districts are very well adapted to the production of barley, we have made a special attempt to introduce the Peatland variety, and cut down the losses that generally occur from lodging. Nine hundred and fifty-nine bushels of seed were distributed to 78 different farmers.

FORAGE CROPS.

The extension of forage crop growing has made another great step during the year due to the Dominion Seed Branch's policy whereby seed

is advanced to farmers at half the cost price. This policy we consider very commendable, as it renders possible the introduction of certain crops, especially legumes, which are very essential for the establishment of a sound farming plan, particularly in our districts. The growing of same will: (a) insure a greater amount of a better quality of roughage; (b) improve the physical and chemical condition of the soil; (c) facilitate weed control; (d) increase the yields and lower the cost of production.

Through this policy, it has been possible to put out in our district 9,306 pounds of some kind of forage crop seed, which was sown to 937 acres on 80 different farms.

SHRUBS AND TREES.

A special effort is being made to encourage the farmers to plant trees and shrubs around their buildings for protection and beautification. Ninety-eight pounds of caragana seed were sent out on request to 50 different farmers, several school boards and hospitals. Seven applications for large numbers of trees to establish bluffs or wind-breaks were sent into the Forestry Branch for farmers applying to this office.

JUNIOR CLUB WORK.

Three Grain Clubs were in operation during the year, comprising 54 members. Unfortunately, the early frost caused considerable damage. In two of the districts concerned, namely, Bon Accord and High Prairie, most of the members will have to buy their seed at Donnelly, where the third club was located. Good seed barley was harvested.

Four Beef Calf Clubs, comprising 120 members, made very good progress during the year. Legal and Falher Clubs, operating for the fourth year, have shown a very noticeable improvement in the quality and uniformity of the stock. A special prize of \$15.00 was, this year again, donated by the Red Polled Breeders' Association for the purchase of a pure-bred heifer to the winner of the first prize in the calf class of the Falher Red Poll Club.

The two other Calf Clubs were organized in the Edmonton district, for the finishing of calves during the winter, and proved to be very encouraging. Every member except one or two had never fed calves before, and it turned out that 50% made a real good job of it. A joint fair was held on May 29th, at which 44 calves were shown. A number of others could not come on account of a ban on trucks on the highways. An auction sale was held after the show at which the champion calf weighing 840 pounds sold for 32½ cents a pound. Another one weighing 710 pounds went up to 35 cents a pound. The reserve champion sold at 22½ cents a pound. The average price for the whole sale was \$8.25 per cwt., while the market price for good fat calves was 4.50 per cwt.

BROOKS DISTRICT

(M. L. FRENG)

(N.B.—In the following report, reference is made to activities of the district office at Lethbridge, since District Agriculturist M. L. Freng was stationed at that point until May 31st.)

The District Agriculturist office for the Lethbridge District was carried on by the writer during 1935 up to June 1st, at which time he was transferred to the Eastern Irrigation District, Brooks.

The work at Lethbridge was carried on along similar lines as in former years. During January and February, Short Courses and farm meetings were held throughout the District. Subjects discussed were live stock problems, stressing feeding and finishing, improving our bacon hogs, dairying, and irrigation problems. The meetings were well attended, and very good discussions followed.

The following Junior Clubs were conducted:

Baby Beef Club	1
Holstein Calf Club	2
Pig Clubs	2
Grain Clubs	5

The value of these clubs to the District cannot be disputed. There is a marked improvement in quality where these clubs have been organized.

The Lethbridge District has made remarkable progress in spite of the depressed conditions. The sugar beet industry has been a wonderful stimulant in the District. The cultural methods are carried on along the most improved methods. The average yield has nearly doubled since the first couple of years the factory started.

The canning factory is also making progress, and it opens up a market for a wide number of specialized crops suited for canning purposes.

A fair start is also being made in the growing of brome corn. The quality is considered equal to that produced south of the line. Tame mustard has also been grown quite successfully in the Warner District.

The cultural methods, especially towards the control of soil drifting, have met with success, and are gradually being adopted in other districts. Our office has assisted and co-operated with the Experimental Station staff, the Board of Trade, the Service Clubs, the Fair Board, the business firms, and the general public, in carrying out our duties while in Lethbridge.

In taking up my duties at Brooks on June 1st, it was too late for the organization of Junior Clubs, and it naturally took some time to make new connections. As you know, the Canadian Pacific Railway Company transferred its interests in the Eastern Irrigation District over to the District last spring, so there will be considerable re-classification of land and adjustments taking place. The District management, however, is making rapid and satisfactory progress in this connection. There seems to be a much better feeling among the settlers, and by the greatly reduced prices of land and proper adjustments, it will give the settlers encouragement to develop their farms and homes; and with the possibility of a sugar factory and canneries being established, this should develop into a well balanced farming community.

The Eastern Irrigation District with its many adjacent ranchers, both sheep and cattle, adapts itself to the finishing of live stock. The finishing of lambs and steers has already become an important part of the farm practices. There are two Feeders' Associations, namely; The Brooks Live Stock Feeders' Association and The Bow Slope Live Stock Feeders' Association. At the request of the Brooks Association for the Department of Agriculture to furnish a field-man to assist in the supervising of locating,

feeding, selecting and marketing of the live stock, Mr. J. E. Price was appointed assistant at our office. He has devoted nearly his entire time to this work. Due largely to the attractive prices of feeder lambs last fall, instead of the ranchers putting their lambs out on contract feeding, the tendency was to sell to packers. There were about 10,000 feeder lambs shipped from Medicine Hat District to Ontario. This resulted in a decreased number of feeder lambs for this District. However, the Brooks Association will market about 9,000 lambs, and the Bow Slope Association will market about the same number. Together with private feeders, it is estimated that over 20,000 lambs will be marketed from this District. There is a considerable increase in finished steers. Both associations have begun shipping fat lambs and will continue to do so week by week.

The Canadian Pacific Railway Company transferred to the Alberta Department of Agriculture station called the Headquarters, comprising about 200 acres, of which about 55 acres is devoted to horticultural work. A demonstration farm of about 185 acres, of which there is 15 acres in fruit trees and garden, was also transferred. Owing to the lateness of taking over this property, and the weedy condition of some of the land, efforts were made to summer-fallow the farm land, and to keep the orchard and horticultural grounds in condition. Owing to the very dry season, the orchards were irrigated twice during the summer, and had one good late fall irrigation. There were a great many visitors from all parts of Canada during the summer. There are approximately 29,000 trees and shrubs at the Headquarters, containing wide varieties of standard apples, crab apples, plums, cherries, grapes, pears, wild fruits, and small fruits; also black walnuts, butternuts, horse chestnuts and hazelnuts which are bearing this season. There was approximately 19,000 pounds of fruit picked, some of the older trees yielding up to 400 pounds.

Some of the best varieties of plums and cherries were budded on native hardy plum seedlings this fall, and a considerable quantity of fruit and nut seedlings were also planted. We also gathered material to carry on some root grafting this spring. The importance of developing hardy suitable varieties of fruit trees for this Province is well realized, and we hope that plant breeding work will be conducted by a capable plant breeder in the near future at this station.

The Grimm Alfalfa Seed Plant contracted with several farmers to grow seed, canning and garden peas. There were 1,600 acres planted, and about one and a quarter million pounds of cleaned seed produced. There will also be approximately 160,000 pounds of alfalfa seed, 130,000 pounds of sweet clover, and about 12,000 pounds of White Dutch. The general crop conditions were fair, resulting in a little better than average crop. The quality generally is above the average.

CLARESHOLM DISTRICT

(B. J. WHITBREAD)

The District Agriculturist was stationed at Claresholm the latter part of May. Only a limited amount of extension work had been done in this district previously, and this work was limited to Junior Club organization. Owing to the farmers being very busy in their seeding operations, the

month of May is not the easiest time to get an agricultural programme under way. The area covered was from Cayley south to Macleod, west to Pincher Creek and from Claresholm east to Lomond. The Government's services in this line of work were apparently appreciated, as when the office was closed after being opened for only seven months, a petition to keep it open was sent to the Government by the Claresholm Men's Club. The office was closed November 30th.

The first work that was done in the district was to arrange for meetings to be held in the interests of Junior Swine Club work. Eventually meetings were held at ten different places. Similar work had been done at most of these places several years ago by the School of Agriculture at Claresholm before it was closed. There was a good deal of sympathy for the work in these districts, and while only four clubs were organized, there was every indication that more interest would be shown in 1936. However, there were a few in every district who were ready for Junior organization, but the numbers were too small to undertake anything definite, so that nothing more than a contact was made which can be followed up with definite results in 1936. The four clubs organized comprised three Junior Wheat Clubs and one Swine Club. These clubs carried through the season and had successful fairs in the fall. The usual summer program was carried out. Field days were held and instruction of an educational nature was given. Not only the swine members, but their parents and other adults showed keen interest in this work and expressed their appreciation on many occasions. The Claresholm district is devoted largely to wheat raising on a large scale, especially the eastern part. The western part of the section is in the foothill country and is devoted largely to ranching. This means that the district is operating on a large scale and not greatly diversified. Where enterprises are on a large scale and few in number, it is found that the operator is often both resourceful and independent. This means that the District Agriculturist can be of help only in so far as he has advice to offer or some help to give of a new character. There was ample grass during the summer, but the more pressing problem of finding hay, and the apparent necessity of making plans to grow this crop, was of concern to most ranchers.

The wheat crop was average and will prove remunerative through the western part of the area in question. This is especially true where operations are on a large labour saving basis. The Claresholm area, in particular, is strong in the practice of cover crops while the areas further east rely on trash cover. It was interesting to note, where the two practices were carried on on the same land in the vicinity of Claresholm, the yield of wheat was 35% greater on the land cover cropped than on that of trash cover. It should be mentioned that the yield in this locality was from 25 to 35 bushels on fallow. The explanation of the difference in yield is that more weeds grew in the bare trash covered fallow, and any moisture taken by the cover crop in its growth was replaced by the winter's precipitation and conserved by the covering the cover crop affords. The soil drifting problem is fully appreciated by the farmers in this whole area and steps are now under way to form an association under Dominion Government supervision in an endeavour to induce farmers to follow the best cultural methods.

The seed question is also one which holds the attention of the wheat farmer at this time. There has been a small turning toward the growing of Red Bobs wheat, as it matures a few days earlier than other varieties

which gives the users of combines the desired few days earlier start with harvest and there has been no diminution in yield; in some cases slightly higher yields have been noted. The harvest of 1933 was touched by frost in this area on July 19th. This frost was better weathered by the Red Bobs that year than by the later Marquis.

Oats and barley are not such widely grown crops. There is, however, quite a demand for the early beardless barley for hay. Barley can be so well replaced by wheat in all market feeding that the precarious outcome of growing barley need not be attempted. It is still necessary to grow oats. It has become a general practice to grow oats on fallow rather than risk the catch crop it proves so often to be on stubble.

There is just a possibility that some of the earlier maturing varieties of oats might be of value in this area, such as Gopher and Legacy. Very little is known of these varieties, but it would seem that this is an area suitable for these varieties.

There is a very indifferent attitude toward the growing of forage crops. The value of these are conceded by farmers, but their experiences in getting catches have been disappointing, as have the subsequent yields. It is probable that forage crop failures are chiefly due to not adopting the rowed method of growth and to the practice of seeding down with grain, which is allowed to ripen instead of being cut off as greenfeed to give the grass an opportunity to get well established the first year of its growth.

The above sets out the crop problems briefly as they appear at present in this area. It is always one of moisture conservation first and the best utilization of that precarious factor together with the ever present one of soil erosion. Fertility standards of this soil seem to be unimpaired in so far as crop yields show at present. There is an indifferent amount of commercial fertilizers used at present which quantity may increase as time passes.

LIVE STOCK.

While the percentage of farmers raising cattle is comparatively small in this area, there are a few cattle on most farms. These cattle are not of any particular breed and the most convenient sires are used rather than any one breed. It results in a very mixed breeding and a low class of market cattle. The chief function of the average farmer's cattle in this wheat area is to supply meat and milk for home consumption. There is some marketing of cream and considerable fall shipment of stock. Creameries and shipping associations are to be found functioning at most large towns.

There is considerable interest in the feeding of hogs. The Yorkshires are by far the most popular and, since the more general acceptance of wheat as a fattening feed, hog raising has been increased. There is a very general idea that it pays to have only spring litters and that these be allowed to forage on the field after the harvest is over until the 1st of November, after which they are confined for fattening. Junior Swine Clubs have been largely responsible for the present distribution of Yorkshire hogs in this entire area.

Sheep are found very infrequently in the better wheat raising sections. They are running in large bands on the eastern side along the Little Bow River and over abandoned farm land. The small farmer's flock is almost non-existent. The ranch bands are the usual type of mixed blood, raising lambs being the chief object.

Poultry is kept on most farms and quite a number are interested in this sideline. It would seem that poultry is preferable to milk cows as a summer source of revenue.

There is a large market for hatchery eggs at Lethbridge and Calgary, and this has encouraged extensive blood testing of flocks. The Barred Rock is the most popular breed. Rhode Island Reds, Leghorns and Buff Orpingtons are also raised. Some 5,000 birds were blood tested this year. Turkeys are to be found in small numbers on most places where an attempt at diversification is made. The climate is particularly suitable to poultry raising.

While the tractor appears on the largest number of farms there is not as great an abandonment of the horse as a few years ago. The scarcity of horses through the fact that none were raised for several years, has given stimulus to horse breeding. Not many stallions are to be found and more could be used in this area. There is a possibility that some endeavour will be made by groups to introduce stallions next season.

Owing to the large and general practice of crop and fallow, weeds are not a menacing factor. It is true that there is the occasional patch of Canada Thistle and that there is a large abandoned area of light land west and north of Carmangay, badly infested with Sour Dock, but generally speaking, weeds are well held in check.

Grasshoppers were the most prevalent of insect pests this year, but were not as severe as in the two previous years.

LETHBRIDGE DISTRICT

(A. A. CAMPBELL)

Precipitation figures for 1935 as recorded at the Experimental Farm, Lethbridge, totalled 11.30 inches, which is 4.66 inches less than a thirty-one year average of 15.96 inches. The precipitation was extremely light during the growing months of June, July, August and September. Weather conditions during the three spring months were cool and moist, retarding cultivation and seeding operations, which caused very adverse growing conditions when followed by the extremely light precipitation of the four months following. The result was lighter yields than were attained during the preceding year.

Many dry land farmers, expecting a wet season, stubbled in large acreages, much of which acreage eventually proved a total loss. Consequently this variance from the well established two-year summer-fallow grain rotation proved disastrous to many operators in 1935 and has caused considerable decrease in the summer-fallowed acreage for the coming crop season.

Periods of unfavourable weather caused delay in grain threshing and beet digging in the irrigated areas, with the resultant effect of decreased fall irrigated and fall plowed land. Fortunately, during the growing

season there was a lack of the usually high temperatures and strong winds which are so common in this district, otherwise yields would have been lessened, considering the light precipitation.

Late seeding operations followed by light precipitation naturally resulted in a heavy demand for water by the irrigation farmers.

This situation was successfully coped with by the Lethbridge Northern and the C.P.R. Irrigation Projects, both systems being obliged to carry peak loads for a considerable length of time during the growing season.

Hail-storms damaged crops from 10 per cent. to 100 per cent. over 7,000 acres.

LIVE STOCK.

Horses.—There are a number of good stallions in the District, Percherons predominating. Largely owing to increased prices received for horses during the past season, there has been an increase in the number of mares bred.

Cattle.—There is room for considerable improvement in the quality of both beef and dairy cattle.

Owing to the low prices prevailing for butter fat, there has not been much recent incentive to increase the numbers of dairy cattle.

Cream production has decreased about 20 per cent. during the last four months.

Approximately 100,000 pounds of surplus milk per month is delivered to the City of Lethbridge.

An increase of 5 cents per pound butter fat has been arranged to start the first of January. Otherwise, producers intended curtailing their milk supplies.

A number of Holstein breeders intend using Angus bulls, hoping to be able, thereby, to realize a little money from the sale of the cross-bred progeny.

Sheep.—No increase is noticeable in the number of small farm flocks. However, an increase in the number of lambs in feed lots can be reported.

Swine.—Shipment of hogs has increased 20 per cent. over last year, and an improvement in quality has been made.

Feeding operations are again being carried on quite extensively. It is estimated that approximately 5,000 head of cattle and 50,000 lambs are in feed lots in this District.

Local stock yards figures show an increase of loadings for the year of 220 per cent. in cattle and 20 per cent. in hogs, and smaller increases in sheep and horses.

Following are the total number of animals shipped during 1934 and 1935, respectively: horses, 1,045, 1,227; cattle, 3,525, 11,499; sheep, 16,791, 17,368; hogs, 45,188, 53,963. All hogs were graded in the City before shipment.

Poultry.—Forty-three poultry flocks have been culled and 5,257 birds blood-tested, with requests to hand for the testing of an additional 2,000 birds.

There is room for much improvement in the quality of poultry and in the handling and housing of the flocks.

The greatest weakness seems to be in the lack of attention made in obtaining better male breeding stock.

FIELD CROP IMPROVEMENT.

Soils.—Requests are frequently received for suggestions re irrigated farm rotations.

Several excursions have been piloted to that very interesting section of the District, from Claresholm to Lethbridge, where the cover crop and strip farming methods of soil drifting control have been practiced so diligently for a number of years.

Prominent agricultural officials of the United States Department of Agriculture occasionally pay visits to this locality.

Strip farming is now practiced extensively from the foothills east to Winnifred.

CEREAL CROPS.

A few good operators only are making much progress in the quality of seed being produced, in addition to the Junior Grain Club members. Marquis wheat is grown most extensively; Banner and Victor oats; Trebi barley, and Gehu corn.

Excellent awards were received by a number of local expert showmen at the Toronto Royal and Chicago Grain Exhibitions.

Commercial grading of wheat was high this season, with probably more No. 1 Hard grade than ever before. A very small proportion of grain was graded lower than No. 2 Northern.

From the time threshing operations started, barley was being sold at 40 cents per bushel, which was over double list price.

FORAGE AND PASTURE CROPS.

In the irrigated areas, alfalfa is the main hay crop, and is now selling at \$7 per ton in the stack.

Unless more severe weather than usual prevails during the balance of the winter, there will be ample hay to meet all feed requirements within the District.

Sweet clover is also grown extensively to fit in with the necessary rotation where sugar beets are grown.

Irrigated pasture grass mixtures are not utilized to the extent they could be used. An increase in the prices paid for dairy products would tend to encourage stockmen to seed down larger acreages to pasture.

Much interest is being shown by dry land farmers in the possibilities of crested wheat grass. A few farmers have small acreages on which they are growing seed, with fair results.

MISCELLANEOUS CROPS.

Sugar Beets.—The sugar beet yield was several tons less per acre this season, chiefly due to late seeding, followed by extremely dry weather.

Considerable dissatisfaction is evidenced amongst the growers over the low price per ton paid for beets, and the proportionately high contract labour prices.

The completion of the new Sugar Factory at Picture Butte in 1936 will tend to an increased acreage seeded to beets, when present grievances are ironed out.

Fodder Corn.—This crop is not used to the extent it should be, in spite of the fact that good yields of excellent quality are grown in this District. When higher prices are available for meat products, undoubtedly more attention will be given to this crop.

Potatoes.—The estimated acreage of potatoes in 1935 was 5,000 acres, or practically the same as the previous three years.

The usual average production has been 350 acres, and this year only 150 cars will be available for shipment.

The past season's production is estimated at 100 bushels of marketable potatoes per acre, with black leg taking an enormous toll out of the visible supply.

There is an urgent need of better seed stock in this locality, as practically no new seed stock of Gem varieties has been introduced since 1922.

A Junior Potato Club would probably be the most expedient and economical method of attaining this object.

More careful grading of car loadings would aid materially in ensuring improved and wider markets.

F.O.B. prices at close of 1935 was \$12 per ton, which is a good improvement over the previous three years' average of \$8 per ton, when the estimated cost of production on car is considered to be \$11.50 per ton.

Potato diseases in order of prevalence:—

Black Leg	15%
Giant Hill	10%
Mosaic	3%

Peas and Beans.—Considerable interest was shown in these crops in the Lethbridge Northern Irrigation District due to the O'Loane, Keily Company of Vancouver, having approximately 600 acres grown under contract.

Fortunately, some very good yields were obtained which will be an incentive for new growers to get into the business.

Sufficient care was not taken in selection of land for these crops before planting as regards freedom from weeds and the possibility of satisfactory irrigation.

Fields were observed comprising over 50% infestation of either wild oats or Canada thistle.

Lack of space between rows might also be mentioned, also the acreage per farm was too small in certain cases causing lack of sufficient care and interest being shown by the grower.

The Taber Canning Company at Taber, had somewhat better results with farmers growing specialized crops under contract in acreages as follows:

Peas for seed	400 acres.	(Ave. yield 1200 lbs. per acre)
Peas for canning	400 acres.	(Ave. yield 1½ tons per acre)
Corn for canning	150 acres.	
Broom Corn	400 acres.	
Strawberries	25 acres.	
Pumpkin	20 acres.	

38,000 cases of peas were canned.

The Taber Company expect to practically double these acreages this year.

In summing up remarks on specialized crops, I have no hesitation in stating the chief monetary value to the grower is from the cleaning up propensities of these crops and the larger yields derived from succeeding crops, as the prices paid the primary producer do not permit of much profit.

WEEDS AND INSECT PESTS.

Weeds.—There is yet a place for much work for a weed inspector in this District in enforcing the destruction of noxious weeds in growing crops and particularly along road allowances.

Pests.—A small percentage of crops were damaged by cutworms and grasshoppers.

Poisoned bait Mixing Stations were operated at Lethbridge, Turin and Chin in this District.

Local authorities are of the opinion that less damage may be expected from grasshoppers in this vicinity this season but an increase in cutworm damage is expected.

SHORT COURSES AND FIELD DAYS.

A number of Field Days for adults and Junior Grain Club members were held at the Dominion Experimental Farm at which interesting and instructive talks were given and useful discussions followed.

Instruction was given to Club members preparatory to the elimination Judging contests, in the judging of grains and swine.

BOYS' AND GIRLS' CLUB WORK.

Junior Grain Clubs consisted of Clubs as follows:

Lethbridge Wheat Club	13 members
Lethbridge Barley Club	8 members
Lethbridge Corn Club	6 members
Coalhurst Wheat Club	12 members
Coalhurst Barley Club	9 members
Burdett Wheat Club	23 members
Bow Island Wheat Club	18 members
Bow Island Flax Club	11 members
	100

Live Stock Clubs comprised:

Lethbridge Beef Calf Club,	24 members
Lethbridge Dairy Calf Club	18 members
Lethbridge Swine Club	12 members
Taber Swine Club	13 members
	67

Total of 167 members.

These Clubs are doing a vast amount of good, being a source of good seed in the areas in which they are located.

An astonishing amount of good seed has been supplied from some of these farms on which Junior Plots have been operated for several years.

Three Junior Club boys of this immediate vicinity entered wheat exhibits in the Junior section at the Toronto Royal and won first, second and third placings.

Another Junior won fourth in Six-Rowed barley, and a Junior Corn Club boy won fourth on ten ears of Yellow Flint corn in the Open class. This is a very creditable win when one considers that corn grown so close

to the foothills was able to place so high when sent to the midst of a recognized good corn growing centre.

Excellent exhibits were made at the Lethbridge Exhibition by Club Members in their showing of dairy calves and beef calves.

The T. Eaton Company purchased the first prize calf at 22½ cents per pound on the hoof. The average sale price on all calves sold was 1½ cents higher than the year previous, namely, \$7.42 per cwt. The Lethbridge Beef Feeding Calf Club is again going strong in the present feeding season with 21 entrants.

This year there are on feed 10 Angus, 9 Hereford and 2 Shorthorn calves.

The pairs of bacon hogs exhibited by Swine Club members were of a remarkably high standard.

BOYS' AND GIRLS' CAMP.

Fifteen girls and fifty-two boys were registered at the Boys' and Girls' Camp held in conjunction with the Lethbridge Fair. Separate tents, with attendants in charge, day and night, were provided for the accommodation of the young people.

Free meal tickets were provided by the Fair Board for the duration of the Fair and a banquet tendered the Camp members.

Instruction in grain judging was given and contests were held in the judging of dairy and beef cattle.

Much interest and appreciation was evidenced by these Juniors.

SCHOOL FAIRS.

School Fairs were held at the following places:—

Barnwell	Attendance	100
Coaldale	Attendance	350
Iron Springs	Attendance	100
Nobleford	Attendance	150

The exhibitors at the Coaldale School Fair are to be highly complimented on the quantity and quality of their exhibits, and the keen interest shown by the large crowd in attendance.

The other Fairs mentioned were just average in so far as live stock and poultry exhibits were concerned.

TREE PLANTING.

Particularly good work is being done at Park Lake in the Lethbridge Northern Irrigation District, in planting trees in their 15-acre park with unusually good results.

A very successful District Corn Show and Seed Fair was held in Lethbridge on November 8th and 9th, at which the Junior Grain Club members held their Achievement Day.

The quality of the exhibits were very good. A number of the exhibits were shown later at Toronto and Chicago and gained high awards.

Valuable help was received from Messrs. M. L. Freng, Chas. O. Asplund and Peter Wyllie during the Lethbridge Fair in handling the Boys' and Girls' Camp and other Junior activities.

The valuable assistance of Miss P. M. Whitton, who works part time in this office, and part time for the Department of Municipal Affairs, is much appreciated and adds very effectively to the progress of work being carried on from this office.

CARDSTON DISTRICT

(CHAS. O. ASPLUND)

The Cardston office was not opened until May 6th, 1935. This report therefore covers only an eight-month period.

GENERAL CONDITIONS.

A wet April and cold, backward May were followed by an extremely dry growing season. In most sections very little rain fell during the summer months. The harvest season, however, was free from injurious frosts and as a consequence the quality of grain harvested was excellent although the yield was not as good as the preceding year. Aside from the drought, the most important cause of yield reduction was grasshoppers. The outbreak of this pest was fortunately confined to certain rather restricted areas. There were no serious hailstorms in this district. The dry summer resulted in short grass and a restricted winter fodder supply. In consequence of this there was some early liquidation of breeding sheep and cattle as well as a marked decrease in local dairy production. The cold, backward spring resulted in fairly serious losses in the range lamb and calf crop and also reduced the number of turkeys and young pigs considerably. Altogether the most optimistic angle to agriculture is the improved prices that have been received. In this connection, it is my considered opinion that, despite reduced yields and smaller numbers of live stock the economic condition of our farmers is slightly improved over 1934.

FIELD CROPS.

I took thirty samples of seed wheat from seed drills in my District to be checked by the Crop Testing Plan. Many of these samples showed the need of better cleaning and purer seed, but by far the large percentage indicated that most of the seed in our best wheat growing areas is clean and of good purity. The main varieties being grown are Marquis and 222, the latter is steadily growing in popularity in the foothills area. Oats and barley are both very seriously neglected in most of this district and it is a practical impossibility to obtain suitable seed. I believe that steps must be taken to correct this situation, especially in the irrigated sections and in the foothills where an ample supply of feed grains is essential to the type of agriculture being carried on.

SUGAR BEET INDUSTRY.

This year's beet crop averaged approximately $9\frac{1}{2}$ tons per acre, a three-ton per acre reduction from the previous year. A one per cent increase in sugar content will, however, offset the reduced tonnage to some extent. Altogether, the year was a critical one as far as the industry was concerned and presented problems that are still perplexing the growers. Principal among these problems is the question of labour. Much dissatisfaction at prevailing prices for hand labour contracts was expressed this season and on the other hand, while farmers realized the wage scale was low, they fully recognized that they could not pay a higher wage and remain in the beet growing business. The unsettled condition resulting from this situation reduced the efficiency of labour in the beet fields and had a lot to do with the reduced tonnage, although the cold spring and

dry growing season were contributing factors as well. As a member of the Central Executive of the Beet Growers' Association, I have been in close touch with the situation and realize to some extent the importance of this industry to Southern Alberta in its employment of labour, as a suitable irrigation farm crop, in its creation of new wealth and in the encouragement it has given to better farming methods.

LIVE STOCK FEEDING.

A recent survey indicates that there are approximately 4,000 head of cattle and 35,000 lambs on feed in this district. Raymond is the centre of this activity, because of its proximity to the sugar factory by-products. Lambs are (at the last of December) now moving to market at very satisfactory prices. All live stock on feed are making exceptionally fine gains as the result of the fine winter weather. Interest in live stock feeding is increasing annually and some of our most important contacts are made amongst the feeders. Most of the cattle fed throughout the area will be of export quality when finished.

SHEEP AND SWINE IMPROVEMENT.

I purchased and distributed, under the Federal Ram Bonusing Policy, 15 rams this year. Another year, if the Policy is in effect, the requirements will be greatly increased. Much assistance has been given in the location and exchange of boars. Headway has also been made in the improvement of feeding methods by personal contact and through meetings that were held during the summer. One of the main causes of the extremely low hog grades in this District has been the practice of ranging hogs. That farmers are getting away from this practice is indicated by the fact that this year we have attained the highest percentage of selects and bacons yet attained (approximately 62%).

SOILS.

By far our most serious soil problem is drifting. Great headway was made this year in stripping farms. A great deal more of this work will be done in the coming year. Along with water conservation, the question of soil drift control has been uppermost in the minds of farmers and discussions on these topics have been numerous.

WEEDS.

While the weed situation is very serious in many parts of this District, headway has been made in their control. Almost every area has improved its position in this regard, with the exception of that portion from Cardston west and south. A general improvement has been noted in summer fallow methods. Some study was made of three important perennial introductions, namely: Hoary Cress, Russian Knapp weed and Leafy Spurge, all of which occur in this District. Another weed that is causing no little concern in range areas and on cultivated hay land is Annual Brome.

POULTRY WORK.

Acquaintance with the poultry keepers of the District was hastened by the blood testing work carried on this autumn and winter. To date I have tested 4,500 birds. Through contacts made in this work, I have been able to give a great deal of information regarding housing, feeding and sanitation.

CLUB WORK.

Wheat Clubs, 2; membership, 33.

Oat Clubs, 1; membership, 11.

Beef Calf Clubs, 7 members in Lethbridge Club.

A team from the Cardston Grain Club was second in the Provincial Competitions.

Two Swine Clubs, four Wheat Clubs and the Southern Section of the Lethbridge Beef Calf Club are projected for 1936.

AGRICULTURAL MEETINGS.

Number of meetings held, 13. Average attendance, 50. Various subjects were discussed at these meetings including Bee Keeping, Swine Improvement, Cattle Improvement and Junior Club Work. The Bee meetings were attended by Mr. S. O. Hillerud.

SCHOOL FAIRS.

Assistance in judging 11 School Fairs was given. The fairs were well patronized and, I believe, well worthy of Government support. The tendency in many of them, however, is away from Agriculture and something should be done to emphasize this phase of the fairs another year if they are to be most valuable to rural boys and girls.

Report of the Schools of Agriculture

OLDS SCHOOL

(JAS. MURRAY, *Principal*)

The term for 1934-35 terminated as usual about the end of March for all of the students except those taking the Third Year work. Formerly, a special set of examination papers was set for this class about the middle of May, but this year the practice was changed and they were required to write at the same time as regular High School pupils in June.

At the closing exercises in March, diplomas in Home Economics were granted to thirty-one young women and in Agriculture to thirty-eight young men. We were fortunate in having with us for the evening the Hon. F. S. Grisdale, Minister of Agriculture, and Archdeacon Swanson of Calgary, both of whom addressed the graduating class.

This year our enrolment is again over the 200 mark, the classes being divided as follows:

Students in Agriculture:

First year	80
Second year	35
Two-in-one	20
Total	135

Students in Home Economics:

First year	31
Second year	10
Two-in-one	30
Total	71

This is the highest enrolment of students in Home Economics in the history of the School. It has been necessary to make more than the usual number of divisions in order properly to accommodate them in the laboratories. The dormitory facilities are taxed to the uttermost—in fact, one sitting room has been converted into a sleeping room and the dormitory help has had to be provided with accommodation elsewhere. We would appear to have reached the point where the number of students accepted in these classes would have to be limited to the laboratory and dormitory accommodation available. Any increase from our present number would result in extending the accommodation and enlarging the staff.

The Two-in-One classes are both larger than ever, with a total enrolment of fifty. This year most of the instruction to these classes is given independently of the first and second years. It has, in fact, been found necessary to make two divisions of the Home Economics class for all the practical work such as sewing, cooking, home nursing and manual training. All of those taking these courses have taken at least three years of High School work, a number have taken their Normal School training and several have had experience in teaching.

For the first time in ten years we have no Third Year class as the applications received for the course did not warrant the additional expense

necessary for this class. For the first few years after the course was first offered, there was an enrolment of from twenty to thirty-five. A number of these were students who, after taking their diploma course, found that they were in need of additional training, but were so situated that they could not conveniently get it in the ordinary High School, nor had they the qualifications that would admit them to a University. Others, after starting professional training in Home Economics and Agriculture, wished to go forward to the University for a degree, but did not have matriculation standing.

Of recent years, many of those who contemplate going in for a professional career have come to us with grade eleven or grade twelve standing and, after completing the work for a diploma, have been able to go directly to the University. Many of the others taking our regular two-year course, have had one, two or three years in High School and have no intention of proceeding further in an educational institution after receiving their diplomas. The change is largely an outcome of the present day tendency for students from rural districts to take more high school work after finishing that of the public schools. There may be a demand for the Third Year course again, but only time will tell.

Each year in spite of the utmost precaution we have a number of cases of infectious diseases among the students. The hospital rooms are only partially isolated so that the risk of epidemics is too great. We are in need of a separate building as an infirmary where such cases could be fully isolated and treated with less risk to the student body.

SCHOOL FAIRS.

There were forty-seven school fairs in the southern part of the Province in 1935, between September 2nd and October 5th. These were all supervised from the Olds School. Seeds were distributed in the spring to fifty-two centres but five failed to hold fairs. The fairs for Millet, Hanna, Stettler and Strathmore were cancelled on account of Infantile Paralysis, and that at Wrentham, on account of lack of preparation.

The fairs for the most part were well attended and keen interest was shown in most cases. The number of entries at the various fairs ranged all the way from 358 to 1519 and in practically all cases were of high quality.

For judging purposes, the territory was divided into three circuits and two regular judges, members of the Agricultural School staff attended each fair. Miss L. Rogers and G. R. Holeton took circuit No. 1 in the northern part of the district; Miss C. McIntyre and W. S. Benn took circuit No. 2 south of Calgary while Miss L. Milne and W. M. Malyon covered circuit No. 3 in the south-eastern part of the Province. The District Agriculturists assisted with the judging at all fairs in their respective districts.

Some effort has been put forth to revive some of the fairs which were discontinued on account of the depression. More or less interest was shown in the twenty-odd centres interviewed, the chief difficulty being in securing parties who were willing to undertake the responsibility of serving in an official capacity. We are reasonably sure that about ten of these centres will re-organize for 1936, and others will line up as conditions improve.

SCHOLARSHIP SHORT COURSE.

The School Fair Scholarship Short Course was held at the Olds School of Agriculture during the week of July 8th to 13th. Fifty-one boys and

fifty-one girls who had won the highest number of points for their exhibits at their respective school fairs in 1934, were brought to Olds, mainly by bus under supervision of guides. Accommodation was provided in the dormitory where they were made very comfortable. Practical class work daily, interspersed with organized play periods kept everyone occupied during the day, and each evening entertainment of a varying nature was arranged for.

The Short Course was just as popular this year as in the past and many were loath to leave when the end of the week arrived. No doubt many of these pupils will later find their way back to the school for the regular courses.

The scholarship prizes of \$75.00 each toward a course at the School of Agriculture were won by Ellen Blair of Naco and Leonard Haney of Iron Springs.

FARM WOMEN'S SHORT COURSE.

In addition to the short course for school children, we had one for farm women when over seventy were enrolled. They came from all parts of central Alberta. Several groups, members of local Women's Institutes, drove in by truck for the daily programmes and returned home in the evening. Those who attend Farm Women's Week from year to year thoroughly enjoy the outing and the programme of lectures and demonstrations that is provided.

The Women's Institutes Girls' Clubs of the Province held their annual convention here in the first week in July. The young women, about sixty-five in number, who attend are drawn from all parts of the Province. The members of the staff contribute to the programme and the delegates become acquainted with the school and the work it is doing.

FIELD HUSBANDRY.

Wheat Varieties.—A few new varieties were added this year so that we might get some data on the behaviour here of some of the new rust-resistant sorts that are being propagated for use in Manitoba and Saskatchewan. Four such varieties were grown, one was obtained from the University of Saskatchewan and three from Mr. L. H. Newman, Dominion Cerealists. While it is not advisable to draw any conclusions from the results of one season, it is worthy of mention that one variety known under the number C-26-44-7 has distinct promise. It is fully as early as Garnet, has a strong straw and yielded rather better. One other variety was almost equally early and had other good agronomic characters. We shall carry these varieties in our tests for a few years. They may not be required here because they are rust-resistant, but they may prove useful in such a district as this where earliness, a strong straw and high quality are required.

CROP TESTING.

In co-operation with the Field Crops Branch of the Department and the Searle Grain Company, acting with several other grain companies, we made field tests of wheat samples from over seven hundred farmers. Over half of the samples came from within fifty miles of Olds. The others were sent in by District Agriculturists in the central and southern part of Alberta.

These samples were planted in our trial grounds—two-rod rows of each—and when they were nearly mature, they were carefully examined by a competent cerealist so that admixtures of varieties might be noted. The samples were classified into three groups, A, B and C, according to whether they were of high purity, of fair quality or of such poor quality that they should be replaced. Reports were sent out to those whose samples were under test so that if necessary they could make arrangements to get a fresh supply of seed.

GRASS SEED GROWING.

Although this district has not had a heavy precipitation, less than twenty inches, it has always been considered good for the growing of grass. Years ago, timothy was grown extensively for shipment. It still grows well but the acreage is very limited.

In recent years, incidental to our work in testing grasses, we have been harvesting seed of a number of the more common species. While the yields have varied from year to year depending upon the weather, in the main good yields have been secured. As there is a good demand for grass seed each year and many districts are not adapted to growing it, it would appear that seed growing of certain species might be undertaken as a commercial proposition.

Following are yields that have been secured here in recent years from several grasses:

Kind	Variety	Seeded	Rate of Seeding	Method of Seeding	Yield per Acre.				Aver. age.
W. Rye Grass	Grazier	1931	4 lbs.	Rows 24 in.	1467	712	533	550	815
W. Rye Grass	Grazier	1932	3 lbs.	Rows 24 in.		1150	910	790	950
Timothy	Gloria	1931	4 lbs.	Rows 24 in.	640	200	75	390	326
Timothy	Gloria	1933	1 lb.	Rows 24 in.			400	558	479
Crested Wheat	Fairway	1922	2½ lbs.	Rows 16 in.		947	132	447	509
Crested Wheat	Fairway	1934	1½ lbs.	Rows 24 in.				960	
Crested Wheat	Fairway	1934	1½ lbs.	Rows 18 in.				908	
Crested Wheat	Fairway	1934	8 lbs.	Broadcast				715	
Creeping Red Fescue	"	1922	8 lbs.	Broadcast		326	92		
Creeping Red Fescue	"	1933	1 lb.	Rows 24 in.			310		

The average yield of seed from the Western Rye Grass (Slender Wheat) was over eight hundred pounds per acre, that of the timothy over four hundred, the Crested Wheat Grass over six hundred and the Creeping Red Fescue approximately three hundred. These are all high enough to make seed growing reasonably remunerative. The yield of Creeping Red Fescue is particularly worthy of note as this grass is a shy seeder in many districts. It has given a good return in each of the last three years—seasons which might be classified as having moderate, light and heavy rainfall respectively. At a number of other points in the Province, the seed yields from this grass in the same years have been negligible.

We have been testing row seeding with broadcast seeding for seed production and find the row method preferable. It is particularly advantageous in dry seasons, but even in years with normal moisture, the yields are better, the seed usually of higher grade and the crop more easily rogued. Stands of grass are more cheaply established in rows and the stands remain productive longer. In the drier parts of the Province, row seeding would probably show up even better than here. We find two feet a satisfactory distance between rows for most grasses but for creeping rooted species, thirty inches is better.

Pasture Mixtures.—For several years we have been testing out a number of grasses, clovers and mixtures for pastures. A short report of this work follows.

The plots here reported on were seeded in 1932, on land which had been in cereals for a number of years. The soil is a productive clay loam in a good state of fertility and comparatively free from weeds. Seeding was done in July by hand. No nurse crop was used and a good stand was secured.

As the blocks were not satisfactorily fenced in 1933, we have no accurate records for that season of the carrying capacity of the different mixtures. The records given are for the years 1934 and 1935.

SEASONAL NOTES.

The growing season of 1934 was unusually dry, the five months, April to August, giving only 6.07 inches of rain divided as follows: April, 1.35; May, 1.52; June, 1.83; July, 1.28; August, 1.09.

1935, on the other hand, was a particularly good grass season with more than the average precipitation and little very warm weather. For the five growing months the precipitation was as follows: April, 2.16; May, 3.2; June, 5.96; July, 4.85; August, 1.58; a total of 17.75 inches.

The difference in carrying capacity in the two seasons is due largely to the rainfall. In 1935, there was sufficient to give a luxuriant growth practically all summer. In 1934, on the other hand, it was very dry all through the season and particularly so after the middle of July.

PLAN.

The blocks seeded to the various mixtures were each a little less than half an acre in area—472 to be exact. Snow fences were used to divide the blocks. For sheep, they are quite satisfactory; they are not suitable for cattle.

When a block had grown up enough to afford good pasturage, sheep and lambs were turned in and allowed to stay as long as there was reasonably good grazing. They were then turned into another block and the same procedure followed. Records were kept of the number of sheep and the length of time for which each block afforded grazing. If there was not sufficient growth on any of the experimental blocks, the sheep were turned into a field on another part of the farm.

The results would have been more accurate if the sheep had been weighed on and off each block and the gains recorded, but the figures given are reasonably accurate in showing the carrying capacity of each mixture. The numbers given are the number of sheep days per acre.

PASTURE PLOTS—1934 AND 1935

Plot No.	Composition of Various Mixtures	Total 1934	Total 1935	Total 2 years
1.	Timothy (Gloria), 2 lbs.; W. Rye (Grazier), 2 lbs.; C. W. Grass (Fairway), 3 lbs.; Siberian Red Clover, 1 lb.; Alfalfa (Grimm), 2 lbs.; White Dutch, 1 lb. (Sown 1934, June, with 12 lbs. Westerwold Rye Grass)	808	2,427	3,235
2.	Yellow Sweet Clover, 6 lbs.; Crested Wheat Grass, 6 lbs. (July, 1931)	813		
3.	W. Rye, Timothy and Y. S. Clover, 4 lbs. each (July, 1931)	672		
4.	Brome, 6 lbs. (July, 1931)	475		
5.	Brome, W. Rye and Y. S. Clover, 4 lbs. each	900	1,184	2,084
6.	Alsike, Timothy and W. Rye, 4 lbs. each	1,013	1,123	2,136
7.	Timothy, 5 lbs.; Red Clover, 5 lbs.; Creeping Red Fescue, 2 lbs. (July 1932)	848	1,305	2,153
8.	Arctic S. Clover, 10 lbs.; Creeping Red Fescue, 4 lbs. (July, 1932)	1,627	2,216	3,843
9.	Seeded 3 bus. oats in all except strips 1, 2 and 5, i.e., brome, crested wheat and W. Rye	846	1,161	2,007
10.	Alfalfa, 4 lbs.; Timothy, 4 lbs.; W. Rye, 4 lbs.	1,119	2,604	3,723
11.	Crested Wheat, 4 lbs.; Alfalfa, 3 lbs.; Wild White Clover, 1 lb.; Siberian Red Clover, 1 lb.	854	2,188	3,042
12.	Oats, 2 bus.; Wheat and F. Rye, 1 bus. each	630	926	1,556

In order of carrying capacity, the first four are as follows:

1. Creeping Red Fescue.
2. Alfalfa, 4 lbs.; Timothy, 4 lbs.; Western Rye, 4 lbs.
3. Composite mixture on plot 1.
4. Siberian Red Clover, 1 lb.; Wild White Clover, 1 lb.; Crested Wheat, 4 lbs.; Alfalfa, 3 lbs.

Alfalfa increased the carrying capacity in all mixtures where it was included. It was not used alone on account of the danger of bloating. Timothy is excellent in a wet year and is good in any year as part of a mixture on account of its palatability. The seed is usually cheap and of good quality. Creeping Red Fescue produces a turf comparable to Kentucky Blue Grass. (Kentucky Blue was included in the experiments but we did not get a stand.) Creeping Red Fescue is an excellent seed producer here and the seed is easily harvested and cleaned. It should be available in quantity by the spring of 1937.

Palatability.—In order to get a check on the comparative palatability of the different grasses and clovers, strips of each were grown so that the sheep might be able to graze on the ones that they preferred. They showed very pronounced likes and dislikes. In palatability for sheep, the grasses and clovers on trial rank about as follows:—

Timothy, White Dutch, Red Clover, Alfalfa, Creeping Red Fescue, Westerworth Rye, Sweet Clover, Oats, Wheat, Brome, Meadow Fescue, Western Rye, Fall Rye, Crested Wheat Grass.

The legumes retain their palatability even when fairly mature, some of the grasses, particularly the rye grasses, tend to get woody and less palatable. Timothy is readily eaten, even when fairly mature.

It was found necessary to seed down a new range of plots in 1935. The information gained during the past three or four years has been of use in working out these mixtures.

These are as follows:—Area of each .4 acre.

Plot 1.—Westerworth Rye Grass (annual); Yellow Sweet Clover. To be sown spring of 1936.

Plot 2.—Brome, 2 lbs.; alfalfa, 2 lbs.; White Dutch, 1 lb.; Siberian Red Clover, 1 lb.; Kentucky Blue, 1 lb.

Plot 3.—Siberian Red, 3 lbs.; Timothy, 3 lbs.; Western Rye, 3 lbs.; Meadow Foxtail, 1 lb.

Plot 4.—Alfalfa, 4 lbs.; Timothy, 4 lbs.; Western Rye Grass, 4 lbs.

Plot 5.—Alfalfa, 4 lbs.; Crested Wheat, 4 lbs.; Creeping Red Fescue, 4 lbs.

Plot 6.—Strips of .03 acre of each grass and clover used in mixtures.

Plot 7.—Creeping Red Fescue, 8 lbs., per acre. Seeded 1932.

The results secured at Olds when the rainfall is about 18 inches should apply fairly well to the country from Carstairs north and throughout the black and dark brown soil areas in the Province. In the districts which are or have been heavily wooded, the legumes, particularly Red Clover, White Dutch and Alsike should do even better than they do at Olds. In the drier parts of the Province more dependence would have to be placed on our more drought resistant grasses—brome, the wheat grasses and sweet clover.

FRUIT GROWING.

Satisfactory progress is being made in the growing of tree and bush fruits. The past season was a favourable one for fruit so that we harvested fruit from nine varieties of standard apples and from fourteen varieties of crabs. Following is a list of the varieties of crab apples fruited, the average production per tree and the number of fruits to weigh a pound.

Variety	Yield per tree	No of fruits to weigh a pound
Alexis	40	72
Nocalyx	15	15
Siberian Red	20	31
Transcendent	152	29
Hyslop	16	34
Silvia	24	30
Whitney	1	22
Dolgo	16	90
Piotash	2	29
Columbia	36	48
Robin	40	52
Anism	1	26
Osman	18	25
Prince	104	21

The following varieties of standard apples produced fruit, Wealthy, Blushed Calville, Redman, Hibernial, Ananoura, Ostrakoff, Patten's, Red Wing, Olgo.

The only plums to fruit were Sapa and Opata and these were damaged by frost early in September.

A number of other apples, crabs, plums and cheerries are under trial but have not borne fruit.

Bush fruits give excellent results and seldom fail to produce a good crop. Currants and gooseberries do not require any winter protection but we find it advisable to at least partially cover raspberries. The following varieties are recommended.

Raspberries—Herbert, Latham, Newman 23.

Black Currants—Boscoop Grant, Topsy, Saunders.

Red Currants—Fay's Prolific, Stewart, Red Cherry.

White Currants—White Grape, White Dutch.

WORK ON GREY AND PEAT SOILS.

Some of the soils from twenty to forty miles west of Olds are giving comparatively poor returns and requests have come to the school for information as to ways and means of making them more productive. We were successful in securing the co-operation of a number of farmers and have initiated some work in the use of fertilizers and in the growing of clovers. Work is under way on both the grey soils and the peats.

Last spring several different kinds of fertilizers were used on wheat, oats and hay crops on both types of soil. Some of the results were very striking. Good stands were secured of several different clovers and alfalfa some of which will have fertilizers applied next summer. We hope to be able to extend this work during the 1936 season.

THE SHOOOL FARM.

The herds of pure-bred cattle have been reduced during the year and now consist of promising young T.B.-tested stock.

The Shorthorn herd is headed by the bull "Missie's Golden Key", 201456. This bull was bred by Yule and Sharpe, and was purchased by the University of Alberta in 1930, where he was used until March, 1935. In the

University herd, he has proven himself a valuable sire and we are anticipating good results from using him on the "Cambus Hercules" and "Dorine Ladas" heifers in the Olds herd.

The Ayrshire herd bull is the young bull, "Glen Campbell Foresight," 174574, bred by F. C. Biggs and Son, Dundas, Ontario. This bull is of good type and is backed with good production.

The Hampshire sheep have done well during the season, giving a good wool clip, and a splendid lamb crop. A number of grade lambs are now on feed to provide meat for the School Dormitory.

Twenty feeder cattle were put in the feed lot in November. Most of these will also be killed for use in the Dormitory.

The swine herd consists of Yorkshires only. Last season the sows were discarded and at present only sows from Advanced Registry dams are being used, mated with the boar "Lacombe Duke 45," 168230. The progeny from these is proving to be of very satisfactory type and quality combined with good feeding qualities. A number of sows farrowing their first litters this season have been entered for advanced registration with good prospects of qualifying.

The demand for young breeding stock is heavier than can be met.

There are twenty-six pure-bred Percherons on the farm. Eleven of these are mares of breeding age, five are geldings, two are stallions, rising three years and two years, respectively, and eight are foals.

The three-year-old stallion, "Jolaet", 15018, will be offered for sale this season. The two-year-old "Cleo's Laet", 15017, is developing well, and promises to be a very good type of horse, with plenty of quality and size.

Of the foals, four were sired by "Stampede," the outstanding stallion owned by Greenway and Clarke of Acme. This horse has been clubbed in the Olds District during the seasons of 1934 and 1935, and has left some very fine colts. Three were sired by "Grand Laet", 14109, owned by Mrs. W. J. Hoagland of Penhold, and one by "Chief Laet," owned by the Dominion Government and standing for service at the Lethbridge Experimental Farm.

These foals are all good, thriving youngsters with plenty of promise.

Field conditions were not favourable during the spring and early summer, as a late, wet season delayed seeding and summer fallowing and made it difficult to fight weeds. Considerable damage was done by the frost on August 14th and September 3rd, particularly to the later crops. Approximately 15,000 bushels of grain were grown on the Farm, of which a fair percentage will be suitable for seed. Hay and pasture crops gave excellent returns. Two crops of alfalfa were cut, giving a yield, per acre, of three and one-half tons.

VERMILION SCHOOL

(W. J. ELLIOTT, *Principal*)

The following report deals with the School and its activities, the School Farm, together with some of the meteorological data that is kept at this station.

SCHOOL OF AGRICULTURE.

Last year we congratulated ourselves on the fact that the School, after being closed for a year, re-opened with the second largest registration

in its history, but that record has again been surpassed by that of 1935-36. There was keen interest in the School up to the end of August, but when the real injury to the crops, from the August 16th frost, became known, inquiries ceased abruptly and prospects, right up to the opening day, were very disappointing.

We were greatly surprised, however, to receive 135 on the two opening days. This number rapidly increased until a total of 169 was reached. This surpassed last year and constitutes a new second high registration.

The complete registration of all students since 1924 is as follows:

	1924	1925	1926	1927	1928	1929
1st Year Girls	—	28	38	31	45	35
1st Year Boys	—	40	55	61	72	60
2nd Year Girls	—	—	6	16	11	13
2nd Year Boys	—	—	24	24	32*	31
3rd Year Girls	—	—	—	—	6	2
3rd Year Boys	—	—	—	—	5	13
British Boys	64	23	7	18	35	13
2-1 Girls	—	—	—	—	1	—
2-1 Boys	—	—	—	—	4	10
Totals	64	91	130	149	211	177

*—One of those recorded as a 2nd Year boy in 1928, was a girl, Alma Gudlaugson, who took the course in Agriculture.

	1930	1931	1932	1933	1934	1935
1st Year Girls	19	17	21	—	27	37
1st Year Boys	46	30	35	—	91	61
2nd Year Girls	14	7	8	—	4	15
2nd Year Boys	22	28	19	—	10	33
3rd Year Girls	1	—	—	—	—	—
3rd Year Boys	8	—	—	—	—	—
British Boys	—	—	—	—	—	—
2-1 Girls	6	12	12	—	17	10
2-1 Boys	4	6	3	—	16	13
Totals	120	100	98	—	165	169

At Christmas four dropped out and we started the New Year with a registration of 165.

HEALTH OF THE STUDENTS.

Generally speaking, the health of the students has been satisfactory with no serious illnesses up to date. There have been the usual number of sore throats, colds, etc., but these have been promptly handled or isolated. Dr. Bell did 167 physical examinations, 145 of which had urinalysis done. The following is a list of the defects:

Arches	52	Heart, Mitral Murmur, Extra	
Not Vaccinated	72	Systole	6
Ears	44	Pulmonary Murmur	5
Teeth	38	Tonsils (25% badly infected) ...	105
Gums	7	Eyes	44
Thyroids	19	Joints	16
Hernia	1	Acne	10
Glands	98	Sugar in Urine	4
Defective Posture,		Innoculated (diphtheria)	54
Lateral Curvature	43		

All parents were notified regarding the above and other defects.

In checking the defects for the past four years, it is interesting to note the percentage of rural youth (boys and girls) who are affected by some of the ordinary ailments. Out of a total of 532 students, the following percentages have been affected by the indicated troubles:

Arches	20%	Thyroids	9%
Ears	16%	Tonsils	35%
Teeth	21%	Eyes	23%

THE SCHOOL FARM.

Needless to say, the School Farm is of a great deal of assistance to the School for instructional purposes. It is well stocked with high class live stock; horses, cattle, sheep and swine. This is particularly true since the arrival of a few registered Clyde mares from Oliver. All of this stock is available to the students, both for comparative judging and general instructional purposes.

Aside from its instructional value for the School, the Farm and stock, play very important parts in the way of furnishing cattle, sheep and hogs to first class herds and flocks in the surrounding district. This is particularly true in connection with sires. Many of the young bulls find their way through the Edmonton Bull Sale and a goodly number of rams are being used at the head of flocks that are being started, but it is perhaps in the realm of swine improvement that the School Yorkshire Herd has been of the greatest service, with both males and females. A large number of the herds within a radius of forty to fifty miles, and even far beyond, trace the improvement of their original animals to the stock distributed from this School Farm.

During the past year, some work was carried out in connection with the use of proteins and also the use of cod liver oil in the building up of small pigs. The details of this work would occupy too much space for this report, but are included in a complete report now on file in the office of the Department of Agriculture. During the present winter, we are running some tests to determine the value of feeding frozen wheat and barley.

A small area has been set aside for a six-year rotation, consisting of the following:

- 1st year—Summer-fallow.
- 2nd year—Seeding down with half bushel of oats as a nurse crop and cutting for the silo.
- 3rd year—Hay.
- 4th year—Hay or pasture plowing in July.
- 5th year—Grain.
- 6th year—Grain.

Hundreds of grain test rows were set out. These were taken from drills and represented the grain actually seeded during 1935. These samples were sent in by the District Representatives and came from all over northern Alberta. These tests pointed conclusively to the fact that greater care is needed in connection with the seed grown.

CLUBS AND SHORT COURSES.

During the year, nine Junior Clubs were conducted—five Wheat, one Oats and three Swine Clubs. The work of this branch became so heavy that Mr. P. Wyllie, an ex-student of this School, was secured to assist with the Club work. Mr. Wyllie was a former Swine Club winner who, himself, went to Toronto. He proved his ability by coaching the Dina Clubs so effectively that it was sent to Toronto and won the Dominion Championship. This Club was one of the strongest ever sent from Alberta.

SHORT COURSES.

The School Fair Short Course was held in July with thirty-eight in attendance. This number did not include ten other winners from the Peace River territory, who were unable to attend on account of flood conditions.

No assistance had been given fairs for the past few years, consequently, those eligible to attend were considerably reduced in number, but with some assistance again assured from the Schools of Agriculture, many fairs have been revived with prospects for some six to eight additional fairs to be held in 1936. 1935 was a difficult year, particularly during the month when the fairs were held. This was due to unfavourable weather and the infantile paralysis. However, 25 fairs were held. Full details of these will be found in the complete Annual Report.

FARM WOMEN'S WEEK.

Farm Women's Week proved to be popular this year again, and while there were scarcely as many present as usual, yet those who came had a really profitable and restful time.

AGRICULTURAL FAIR SHORT COURSE.

The Agricultural Fair Short Course proved to be a very important one as we had an enrolment of 212 students. The dormitory was taxed to the limit and some camped on the lawn. The students attended classes for three days at the School of Agriculture and for the Thursday and Friday became the guests of the Agricultural Fair Association. This was the first time that girls were admitted to such a course but with the dormitory adjacent to the Fair Grounds, conditions for proper supervision are ideal. We anticipate this particular gathering will greatly increase.

This Course, together with the School Fair Short Course, we regard as the best type of school advertising, and the most prolific source of students for the School of Agriculture.

THE APIARY.

Work of considerable interest has been undertaken in connection with this branch. True, the industry is not a large one in the Vermilion District, because it presents certain problems that are not so important in other areas. The main study with bees for the past year or two has been to chart the nectar flow by months, and to investigate methods for wintering. Details of the results cannot be given here but may be found in the full report.

WEATHER REPORT.

The School keeps annual records covering rain, snow, sunshine and maximum and minimum temperatures. Complete tables have been published annually covering these figures since 1926.

It is rather interesting to look at the records since 1926, particularly with reference to the four crop months, May, June, July and August. The records show that during every month of May for ten years we have had temperatures of from 29 degrees to 10 degrees. The month of June has been a little more considerate in that only four of the ten years show temperatures under 32 degrees. These were the years: 1927, 30 degrees; 1931, 31 degrees; 1934, 28 degrees; and 1935, 30 degrees.

July is somewhat similar to June in that during two years, temperatures under 32 degrees were registered, and two other years saw the mercury stop at 32 degrees. These were 1927, 32 degrees; 1929, 20 degrees; 1933, 30 degrees; and 1934, 32 degrees. The Augusts since 1926 are worse again with temperatures as follows: 1928, 31 degrees; 1929, 30 degrees; 1930, 23 degrees; 1934, 21 degrees; 1935, 29 degrees.

A survey of the precipitation table since 1926 is interesting as it indicates that Vermilion only receives a moderate supply of moisture. The average moisture per year since 1926 is 17.5 inches. The highest record in this time was during 1930, when 24.4 inches fell, and the lowest in 1929, with only 10.76 inches. The remarkable thing, however, is the fact that 73.2% of all moisture has fallen during the five crop months, that is, April to and including August. The average precipitation for each of these months since 1926 is as follows:

April	1.19 inches
May	1.62 inches
June	3.53 inches
July	3.90 inches
August	2.60 inches

It is the opportuneness of the rainfalls during the crop months that makes this district what it is as an agricultural area.

The average daily hours of sunshine for the year remain a very constant factor. The highest for any year since 1929 was in 1933, when we enjoyed an average of 6.7 hours daily. The lowest was in 1928, when the daily average was 5.0 hours. The average for the ten years is 5.69 hours per day, so that sunshine on the average is a very constant thing.

FRUITS.

The fruit section at Vermilion is gradually coming to mean something of real value. We have crab apples, plums, raspberries, strawberries, currants, (red, white and black), sand cherries and a few Osmond apples. Our production this year indicates clearly that the first six of these may be produced in Alberta, even as far north as Vermilion, in sufficient quantities for the ordinary farm household.